DEPARTMENT OF THE NAVY
FLEET AREA CONTROL AND SURVEILLANCE FACILITY
P.O. BOX 40
NAVAL AIR STATION
JACKSONVILLE, FLORIDA 32212-0040

FACSFACJAXINST 3000.1D CH-1
30

FACSFACJAX INSTRUCTION 3000.1D CHANGE TRANSMITTAL 1

Subj: OPERATIONS MANUAL

1. Purpose. To promulgate change one to basic instruction.

2. Action. Make the following changes to FACSFACJAXINST 3000.1D, dated 01 MAY 2001.

a. Delete pages i and ii. Insert pages i and ii.

b. Delete pages 5-1 through 5-16. Insert pages 5-1 through 5-16.

c. Page 6-5 Para 604 (b)(4)NOTE; change "pacifier" to "PACFIRE".

d. Page 6-10 Para 604 (h); change to read: "h. Small Scale ECM Notification. All operations in the offshore/onshore operating areas which require operation of ACTIVE electronic countermeasures (ECM), including: jamming, chaff dispensing, deception, etc. must have prior approval before COMEX. Approval from JFMOLANT does not constitute permission to conduct exercise in the OPAREA. OPAREA requests must be received 72 hrs prior to event. Units conducting these exercises must comply with Chairman of the Joint Chiefs of Staff Manual 3212.02 CJCSM 3212.02)".

e. Page 6-15 Para 607 (a); make sentences to read: "All aircraft entering Rodman target from a VR route and desiring higher than 2,500 FT MSL, must request higher altitude from SEALORD on initial contact. Sealord will then activate the restricted area above 2,500 FT MSL with JAX TRACON".

f. Page 6-15 Para 607 (b); delete "Range Control" and insert "SEALORD".

g. Page 6-15 Para 607 (c); delete "Range Control" and insert "SEALORD".

h. Page 6-15 Para 607 (d); delete "Range Control" and insert "Pinecastle Targets".

i. Page 6-17 Para 608 (5); delete "except" and insert "including".

j. Page 6-19 Para 608 (c)(2)(a); Change "Pinecastle Control" to "Pinecastle Targets".

k. Page 6-19 Para 608 (c)(2)(c); Change "267.5" to "357.0".

l. Delete pages 8-1 through 8-32. Insert pages 8-1 through 8-45.

m. Page 10-2 Para 1002 (e); Line 2, delete "W-132".

n. Page 12-1 Para 1202 (a); change ACTIVITY from "OINC Det Astor, FL" to "Director, Det Astor,FL".

o. Appendix C, page C-1; Delete sentence "Area information is available via daily recording at 772-2276".

p. Appendix C, page C-2; change coordinate PT 9 to read "9. 29:59N 81:02W".

q. Appendix H, delete pages H-1 and H-3; insert page H-1 and H-3.

r. Annotate Record of changes, Pg. iii.

WILLIAM B. EVERS

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CHAPTER FIVE

TARGETS

501. General. Naval ordnance training areas in the North Central Florida region, under the scheduling control of FACSFACJAX are the Pinecastle Live and Inert Targets, Rodman Target, and Lake George Target areas (See Appendix H for target overviews). Service contractor personnel provide the operation and maintenance of the range complex. LASER operations are discussed in Chapter 8. Scheduling of all range activities is coordinated by FACSFACJAX, as described in Chapter 6. Special projects are invited, and details may be discussed by telephone with the Pinecastle Range Control (Commercial (352)759-2945/3184), the Range Operations Department (Commercial (352)759-3305), or FACSFACJAX. Personal familiarization visits to both FACSFACJAX and the Pinecastle Ordnance Training Range is encouraged. A helicopter pad is situated within the Pinecastle Centroid compound and is available. **Unit commanders must encourage close adherence to scheduled target times and ensure prompt notification of cancellations to maximize utilization of target assets and facilities**.

502. Safety Precautions

a. Aircrews are responsible for positive identification of the intended target, prior to the release of any ordnance.

b. Do not commence LIVE or “Hot” runs unless cleared by the appropriate target control.

c. Use published run-in-lines or headings for accurate electronic scoring of ordnance drops; accurate scoring clock codes are directly related to run-in-lines or headings reported by aircrews. Other run-in-lines or headings may be used for tactical training or aircraft system verification (all LIVE ordnance must be dropped on the published run-in-lines or headings).

d. Pullouts below 200 FT AGL are prohibited.

e. Whenever an aircraft is observed making an unusually low pull-out or other unsafe flight maneuver (e.g. using a run-in-line or heading towards any spotting tower or “buzzing” a spotting tower) in the target area, range safety personnel will immediately notify FACSFACJAX and the aircrew concerned. Range Safety personnel will also immediately report any unusual occurrence (things falling off aircraft (TFOA) e.g., loss of aircraft parts, stores, or the release of ordnance other than that intended).

f. Users should report as soon as practical to FACSFACJAX any TFOA incident that occurs in the airspace under FACSFACJAX cognizance.

g. Prior to LIVE drops on the Pinecastle Live Ordnance Target, each individual aircrew shall make a familiarization run on the range.

h. Whenever a fire or other irregularity is observed in the vicinity of any target, discontinue runs immediately and notify the associated target control; reporting the location and extent of observed fire or irregularity.

i. Following the delivery of recoverable BDU weapons, the affected target may be closed to allow range maintenance personnel to safely locate and recover the weapons.

j. Aircraft carrying ordnance shall avoid over-flight of populated areas.

k. Two-way radio communications are required to drop any ordnance.

l. Aircrews shall assist “SEALORD Control” in identifying aircraft which violate the restricted areas.

m. Afterburner use is prohibited in all target areas between 2000 and 0600 local.

n. Weather minimums. The ceiling and visibility minimums required for dropping ordnance in R-2906 (Rodman), R-2907 (Lake George), and R-2910 (Pinecastle), are 1000 foot ceiling and

three-miles visibility within a five-mile circle of the target. Flight leaders are ultimately responsible for ceiling and visibility determinations, and the safe conduct of all ordnance deliveries.

o. Helicopters landing at the Centriod complex should be aware of the power lines north of the Helicopter pad.

503. Miniature or Practice Ordnance. The terms miniature or practice ordnance as used in this manual refers to BDU-33/MK-76, BDU-48/MK-106, and LGTR's series ordnance.

504. Scoring and Target Data. The appropriate "Target Control" will pass scores, for all scoreable targets (miss distance and clock code direction) for INERT, LIVE and miniature or practice ordnance drops. The strafe target is scored automatically and rounds scored are relayed to aircrew via radio on the Pinecastle Target Control frequency 380.8 MHZ. Score sheets will be forwarded to units upon request. Accurate clock code directional scoring codes are based upon run-in-lines or headings reported by the aircrew. All published latitude and longitude coordinates are referenced to the World Geodetic System Datum of 1984 (WGS84); and all run-in-lines or headings are in reference to True North (T).

505. Range Scheduling and Target Descriptions. Contained below are the range complex normal hours of operation (local time), general target descriptions, target data, and limitations or restrictions for individual targets. Scheduling outside of the normal hours of operation requires the use of overtime for contractor personnel; and is discouraged except for special training requirements.

a. Range Complex Hours of Operation (are published via message)

	STANDARD	DAYLIGHT SAVINGS
(1) Monday and Wednesday -	1000–2000	1200-2200
(2) Tuesday and Thursday -	0900–1700	0900-1700
(3) Friday	– 0800–1200	0800-1200

(4) Target usage outside published times may be scheduled through FACSFACJAX in accordance with established notification requirements.

b. Pinecastle Target Complex (R-2910)

(1) Scheduling. Target scheduling is accomplished in accordance with Chapter 6. Submit target requests for LIVE ordnance at least three-working days (72 hours) in advance of intended use. The target complex is scheduled in twenty (20) minute periods of time. For special or unusual target requirements or scheduling requests contact FACSFACJAX.

(2) Airspace. The Pinecastle Target Complex, which lies within Restricted Area R-2910, will be automatically activated to 11,000 FT MSL (FL110) (Note: Restricted area extensions have lower limits). Restricted Area R-2910 may be activated up to 23,000 FT MSL (FL230) if requested.

(3) Communications. Aircrews will contact "SEALORD" on Frequency 357.0 MHZ. Upon initial contact state number and type of aircraft, restricted area(s) requested, delay time, and maximum altitude requested. Aircraft will be assigned a discrete code and pushed to 380.8 MHZ when crossing into the MOA.

Upon contacting "PINECASTLE" the aircrew will be asked to state number and type of aircraft, target requested, requested run-in line, the number and type of ordnance on each aircraft, and the aircraft commanders name and laser system nomenclature if an on-board laser will be activated. Aircrews will be requested to acknowledge the following "**PINECASTLE" PRE-BRIEF**:

> Minimum altitude over any building outside the target area is restricted to 500 FT. Minimum altitude in the R-2910 restricted area extension is 1500 FT AGL. Aircrews will not release ordnance without being cleared by "PINECASTLE". Each aircrew is required to report in HOT, OFF SAFE, and state the number of ordnance released.

Aircrews will be provided the current weather and advised to maintain VFR, descend on the target, make the first run dry and report positive ID. Once positive target ID is acknowledged, aircrews will then be cleared to release ordnance. Upon completion of ordnance releases, aircrews will report switches safe, confirm WINCHESTER, and request push to 357.0 for departure.

(4) Target locating data is referenced to the World Geodetic System Datum of 1984 (WGS84) format.

(a) Day/Night Conventional Target: 29° 07′ 10″ N
81° 43′ 02″ W

(b) Special Weapons Target: (Main Bull)	29° 07′ 26″ N 81° 43′ 10″ W
- Tower 1:	29° 06′ 28″ N 81° 42′ 54″ W
- Tower 2:	29° 06′ 39″ N 81° 43′ 51″ W
(c) Live Ordnance Target:	29° 07′ 06″ N 81° 42′ 21″ W
(d) SAM Site Target:	29° 07′ 05″ N 81° 43′ 29″ W
(e) Strafing Target:	29° 06′ 54″ N 81° 43′ 51″ W
(f) Inert Ordnance Runway/ Mini-Convoy:	29° 06′ 54″ N 81° 43′ 26″ W
(g) Red Box Target:	29° 07′ 15″ N 81° 43′ 25″ W

(5) Target Facilities and Restrictions

(a) Live Ordnance Target Area. The live ordnance target area consists of vehicle hulks forming a “T” located at approximately 117° T/5,000 FT from the Special Weapons Target. The target is electronically scored by a Weapons Impact Scoring System (WISS). (See Appendix H for target overview).

1. Run-in-Pattern. The allowable run-in/attack heading for the “Live T” target is restricted to 317 or 137 degrees true, + or – 10 degrees. This restriction applies to all types and altitudes of delivery. No runs will be made toward, over, or within 20 degrees of the two spotting towers.

2. Authorized Ordnance. MK-82 LIVE, GBU-12, MK-20 INERT series ordnance, INERT rockets up to five (5) inches in diameter and 25mm PGU-23 (non-tracer HEI) ammo.

3. Restrictions

a. No miniature or practice ordnance, ball ammunition, incendiaries, napalm, or paraflares.

b. No LIVE ordnance drops will be made without positive clearance from target control.

c. Use caution concerning the spotting tower south-southwest of the live ordnance target area.

d. LIVE ordnance drops are prohibited when surface winds in the live ordnance target area, exceed a steady twelve (12) knots.

e. LIVE ordnance can be expended ONLY between 0900 and one hour prior to sunset.

f. Positive identification of the live ordnance target area is required prior to drops.

g. LIVE ordnance will normally NOT be jettisoned “SAFE” in the live ordnance target area; jettison “ARMED” if possible.

h. Burn Index (BI). In accordance with current interagency agreement between the Department of Agriculture (U.S. Forestry Service) and the Department of the Navy, LIVE ordnance, rockets, and incendiaries will NOT be expended within the Pinecastle Live Ordnance Target Area when the BI and Keach Byron Drought Index (KBDI) exceed the following specified levels:

- BI 55 or less: No prohibitions with KBDI less than 400.

- BI 56 to 60: No prohibitions until 1000 and after 1700 (local time) with KBDI less than 400.

- BI 61 and above: No LIVE/INERT ordnance, rockets, or incendiaries. The interagency agreement allows for deviations to be requested by the Navy from the U.S. Forestry Service District Ranger when the BI exceeds 60. In addition, the range complex may be closed by the District Ranger, due to unusual or emergency situations. The BI/KBDI may be obtained from FACSFACJAX.

i. Sound Focusing. Pinecastle Range Control may adjust the number of LIVE ordnance drops on each run predicated upon daily Sound Focusing Forecasts obtained for scheduled LIVE ordnance training from the Naval Atlantic Meteorology and Oceanography Facility Jacksonville, Florida.

j. Time delay fuses are prohibited.

4. Notes:

a. FACSFACJAX will notify the NAS Jacksonville Public Affairs Officer a minimum of three working days (72 hours) prior to each scheduled LIVE ordnance drop so an appropriate press release may be prepared.

b. The Pinecastle Target complex may be closed periodically for removal of unexploded ordnance and other range residue.

(b) Special Weapons Target(Main Bull). The target consists of five concentric rings of 50, 200, 400, 600, 800, and 900 FT radii from the target center. The target is clear out to 400 FT from the target center with two concentric rings of tires at 50 and 200 feet radii from the target center. The target is electronic-ally scored by a Weapons Impact Scoring System (WISS). (See Appendix H for target overview).

1. Run-in Pattern. The allowable run-in/attack heading for the "Special Weapons (Main Bull)" target is restricted to 317 or 137 degrees true +/- 10 degrees. This restriction applies to all types and altitudes or delivery. No runs will be made toward, over, or within 20° of the two (2) spotting towers.

2. Authorized Ordnance. BDU-33/MK-76, BDU-48/MK-106, recoverable BDUs and LASER Guided Training Round (LGTR) series ordnance.

3. Restrictions. No miniature or practice ordnance, or LGTRs are allowed when recoverable BDUs are on target. No ball ammunition, LIVE ordnance, rockets or paraflares.

(c) Day/Night Conventional Target. The target consists of a surplus military vehicle at the target center, surrounded by four concentric rings of tires at 50, 100, 200, and 300 FT radii situated at approximately 157° T/1,825 FT from the Special Weapons Target. The target is equipped with an integral target illumination and lighted run-in-line system for night ordnance training. The target is electronically scored by a Weapons Impact Scoring System (WISS). (See Appendix H for target overview)

1. Run-in Pattern. The allowable run-in/attack heading for the "Day/Night Conventional" target is restricted to 317 or 137 degrees true +/- 10 degrees. This restriction applies to all types and altitudes or delivery. No runs will be made toward, over, or within 20° of the two (2) spotting towers.

2. Authorized Ordnance. BDU-33/MK-76, BDU-48/MK-106, recoverable BDUs and LASER Guided Training Round (LGTR) series ordnance.

3. No miniature or practice ordnance, or LGTRs are allowed when recoverable BDUs are on target. No ball ammunition, LIVE ordnance, rockets or paraflares.

(d) SAM Site Target. A 1600 FT diameter circular service road encompassing the revetted radar and surrounding missile launcher pads. This target is not scored. (See Appendix H for target overview)

1. Run-in Pattern. The allowable run-in/attack heading for the "SAM Site" target is restricted to 317 or 137 degrees true +/- 10 degrees. This restriction applies to all types and altitudes or delivery. No runs will be made toward, over, or within 20° of the two (2) spotting towers.

2. Authorized Ordnance. BDU-33/MK-76, BDU-48/MK-106, MK-82 INERT, MK-83 INERT, BDU-45 INERT, BDU-50 INERT, MK-84 INERT series ordnance, INERT rockets up to five (5) inches in diameter, and Laser Guided Training Round (LGTR).

3. Restrictions. No ball ammunition, LIVE ordnance or paraflares.

(e) Strafing Target. Situated in a clear area on the Westside of the range located approximately 228° T/4,900 FT from the Special Weapons Target. The target consists of an orange/red rectangular banner suspended on the face of an earthen berm. The target is equipped with an automatic scoring device that provides scoring by recorded message on the target control frequency of 380.0 MHZ. Spotting Tower 2, at 90 FT elevation is situated on the foul line 600 FT right of the run-in-line or heading and 1,200 FT short of the banner. (See Appendix H for target overview)

1. Pattern. Right hand pattern only and outside of the two (2) spotting towers using a 038° T run-in-line or heading.

2. Authorized Ordnance. Ball ammunition up to 30 MM.

3. Restrictions. No HE or Tracer rounds.

(f) Inert Ordnance Runway/Mini-convoy. Consists of a mock runway (13-31) situated approximately 205° T/3,575 FT from the Special Weapons Target. The mini-convoy consists of various small vehicles situated at the end of the mock runway. This target is not scored. (See Appendix H for target overview)

1. Run-in Pattern. The allowable run-in/attack heading for the “Inert Ordnance Runway/Mini convoy” target is restricted to 317 or 137 degrees true +/– 10 degrees. This restriction applies to all types and altitudes or delivery. No runs will be made toward, over, or within 20° of the two (2) spotting towers.

2. Authorized Ordnance. BDU-33/MK-76, BDU-48/MK-106, MK-82 INERT, BDU-45 INERT, BDU-50 INERT, MK-83

INERT, MK-84 INERT series ordnance, INERT rockets up to five (5) inches in diameter, and Laser Guided Training Round (LGTR).

3. Restrictions. No ball ammunition, LIVE ordnance or paraflares.

(g) Red Box Target. The target consists of four (4) red rectangular targets, positioned to form a square with a radar unit in the center. The target is located approximately 230° T/1,725 FT from the Special Weapons Target. The target square, is contained within a 200 FT circle. The target is electronically scored by Weapons Impact Scoring System (WISS). (See Appendix H for target overview)

1. Run-in Pattern. The allowable run-in/ attack heading for the "Red Box" target is restricted to 317 or 137 degrees true +/– 10 degrees. This restriction applies to all types and altitudes or delivery. No runs will be made toward, over, or within 20° of the two (2) spotting towers.

2. Authorized Ordnance. BDU-33/MK-76, BDU-48/MK-106, MK-82 INERT, BDU-45 INERT, BDU-50 INERT, MK-83 INERT, MK-84 INERT series ordnance, INERT rockets up to five (5) inches in diameter, and Laser Guided Training Round (LGTR).

3. Restrictions. No ball ammunition, LIVE ordnance or paraflares.

c. Rodman Target (R-2906)

(1) Scheduling. Target scheduling is accomplished in accordance with Chapter 6.

(2) Airspace. Rodman Target lies within Restricted Area R-2906. Restricted Area R-2906 is normally activated to 11,000 FT MSL (FL110) when the target is scheduled. Restricted Area R-2906 may be activated to 14,000 feet MSL (FL140) if requested.

(3) Communications. Aircrews will contact "SEALORD" on 357.0 MHZ. Upon initial contact state number and type of aircraft, restricted area(s) requested, delay time, and maximum altitude requested. Aircraft will be assigned a discrete code and pushed to 321.8 MHZ when crossing into the MOA.

Upon contacting "RODMAN" the aircrew will be asked to state

number and type of aircraft, run-in line, and the number and type of ordnance on each aircraft. Aircrews will be requested to acknowledge the following "RODMAN" PRE-BRIEF:

> **Rodman Target Pre-Brief**: "For multiple runs the minimum downwind altitude is 1,500 FT AGL; remain south of the barge canal if below 3,000 FT AGL". Prior to first ordnance release, advise Rodman target which run-in heading will be used for drops." Upon aircrew acknowledgement of the "Rodman Target Pre-Brief", "SEALORD Control" will pass the aircrew to "Rodman Target Control" on frequency 321.8 MHZ.

Aircrews will be advised to maintain VFR, descend on the target, make the first run dry and report positive ID. Once positive target ID is acknowledged, aircrews will then be cleared to release ordnance. Upon completion of ordnance releases, aircrews will report switches safe, confirm WINCHESTER, and request push to 357.0 for departure.

(4) Target locating data is referenced to the World Geodetic System Datum of 1984 (WGS84) format.

(a) Rodman Target:	29° 29′ 25″ N 81° 46′ 28″ W
1. Tower 1:	29° 29′ 25.8″ N 81° 45′ 53.8″ W
2. Tower 2:	29° 29′ 36.5″ N 81° 46′ 03.8″ W

Rodman Range also includes Helicopter Landing Areas designated as Landing Zones (LZ) and Confined Area Landing (CAL) whose coordinates are as follows:

Open North LZ	29° 30′ 09.2″ N 81° 46′ 13.7″ W	Black Hole CAL	29° 30′ 08.5″ N 81° 45′ 44.7″ W
Open South LZ	29° 29′ 25.2″ N 81° 46′ 25.5″ W	¾ "Three Quarter" LZ	29° 30′ 08.5″ N 81° 45′ 44.7″ W
Moat LZ	29° 30′ 04.3″ N 81° 46′ 08.4″ W	Deer Camp CAL	29° 29′ 17.0″ N 81° 45′ 38.2″ W

(5) Target Facilities and Restrictions

(a) Rodman Target. The Rodman Target consists of a single target, with a surplus military vehicle at the target center, surrounded by concentric rings of tires at 50 and 100 foot radii. The target is cleared out to a 300 foot radius. The target is equipped with an integral target illumination and lighted run-in-line system for night ordnance training. The target is electronically scored by a Weapons Impact Scoring System (WISS). (See Appendix H for target overview).

1. Pattern. A right hand pattern for the 150° T run-in-line or heading; and a left hand pattern for the 330° T run-in-line or heading.

2. Authorized Ordnance. BDU-33/MK-76 and BDU-48/MK-106 series ordnance.

3. Restrictions. No ball ammunition, LIVE ordnance, rockets or paraflares.

d. Lake George Target (R-2907 A/B)

(1) Scheduling. Target scheduling is accomplished in accordance with Chapter 6. Paraflare observation services must be requested. For special or unusual target requests, contact FACSFACJAX.

(2) Airspace. Lake George Target lies within Restricted Area R-2907 A/B which will be automatically activated to 11,000 FT MSL (FL110) when the target is scheduled. Restricted Area R-2907 A/B may be activated to 23,000 FT MSL (FL230) if requested.

(3) Communications. Aircrews will contact “SEALORD” on 357.0 MHZ. Upon initial contact state number and type of aircraft, restricted area(s) requested, delay time, and maximum altitude requested. Aircraft will be assigned a discrete code and pushed to 380.8 MHZ when crossing into the MOA.

Upon contacting “LAKE GEORGE” the aircrew will be asked to state number and type of aircraft, target requested, requested run-in line, and the number and type of ordnance on each aircraft. Aircrews will be requested to acknowledge the following “LAKE GEORGE” PRE-BRIEF:

Lake George Target Pre-Brief: "No drops on the first run to ensure there are no boats in the target area. Minimum altitude within 2 miles of the western shore is 1,200 FT. Minimum altitude near any building is 500 FT AGL. For multiple runs, the minimum altitude over houses located on eastern side of Drayton Island is 1,500 FT AGL." Prior to first ordnance release, advise "Lake George Target Control" of the run-in-line or heading that will be used for drops."

Aircrews will be advised to maintain VFR, descend on the target, make the first run dry, report positive ID and the target area clear of boats. Once positive target ID is acknowledged and that the target area is clear of boats, aircrews will then be cleared to release ordnance. Upon completion of ordnance releases, aircrews will report switches safe, confirm WINCHESTER, and request push to 357.0 for departure.

(4) Target locating data is referenced to the World Geodetic System Datum of 1984 (WGS84) format.

(a) Northern Target:	29° 19′ 12″ N 81° 35′ 14″ W
(b) Center Target:	29° 17′ 02″ N 81° 34′ 42″ W
(c) Southern Target:	29° 15′ 45″ N 81° 33′ 59″ W
(d) MINEX Splashdown Points:	
No. 1: 129.4°T/23,700 FT from IP	29° 17′ 57″ N 81° 35′ 18″ W
No. 2: 129.4°T/26,700 FT from IP	29° 17′ 38″ N 81° 34′ 52″ W
No. 3: 129.4°T/29,700 FT from IP	29° 17′ 19″ N 81° 34′ 26″ W
No. 4: 129.4°T/32,700 FT from IP	29° 17′ 00″ N 81° 34′ 00″ W
Initial Point (Kingsley Point)	29° 20′ 27″ N 81° 38′ 44″ W

(e) Spotting Towers

Lake George Pine Island:	29° 18′ 40″ N 81° 32′ 48″ W
Lake George Nine Mile Point:	29° 16′ 14″ N 81° 32′ 37″ W

(5) Target Facilities and Restrictions

(a) Inert Ordnance Targets. The Lake George inert ordnance range consists of a water surface approximately 2 NM by 7 NM. Within its boundaries are three standard target areas (one scored) and a four (4) target scored MINEX area. Individual target descriptions follow:

1. Northern Target. Consists of a 24 foot square, reflective target center, surrounded by a ring of pilings with a 900 foot diameter. (See Appendix H for target overview)

2. Center Target. Consists of pilings arranged in three concentric rings of 250, 500, and 1,000 foot diameter. The target is electronically scored, by a Weapons Impact Scoring System (WISS). (See Appendix H for target overview)

3. Southern Target. Consists of a 30 by 60 foot rectangular target center (six pilings) surrounded by three concentric piling rings of 250, 500, and 1,000 FT diameter. (See Appendix H for target overview)

4. MINEX Targets. Consists of four pre-planned splash points, on a 129.4° T bearing from the IP located at Kingsley Point, on the southern tip of Drayton Island. The Targets are electronically scored, by a Weapons Impact Scoring System (WISS). (See Appendix H for target overview)

(b) Pattern. Any run-in-line or heading between 090° and 180° may be used on the standard targets and a bearing of 129.4° T from the IP for the four MINEX targets. If scoring is desired on the center target, “Lake George Target Control” must be informed of the run-in-line or heading for proper WISS alignment.

(c) Authorized Ordnance

1. Northern Target. BDU-33/MK-76, BDU-48/MK-106, BDU45/MK-82 INERT, MK-83 INERT and MK-84 INERT series ordnance.

2. Center Target. BDU-33/MK-76, BDU-48/ MK-106, BDU-45/MK-82 INERT, MK-83 INERT and MK-84 INERT series ordnance, INERT rockets up to 5 inches in diameter, and paraflares.

3. Southern Target. BDU-33/MK-76, BDU-48/ MK-106, BDU-45/MK-82 INERT, MK-83 INERT and MK-84 INERT series ordnance.

4. MINEX Targets. BDU-33/MK-76, BDU-48/ MK-106, BDU-45/MK-82 INERT, MK-83 INERT and MK-84 INERT series ordnance.

(d) Target Facilities and Restrictions

1. Paraflares drops are limited to the Center Target and may be monitored upon request. All paraflare drops must be accomplished from sufficient altitude to ensure complete burnout. Surface wind speed and direction reported by Lake George Target Control may be used as an aid in paraflare drift correction determinations.

2. The Northern Target may be used for low altitude radar ordnance training and searchlight illumination practice only.

3. Restrictions. No ball ammunition, LIVE ordnance or rockets.

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CATAS/TACTASS/ NIXIE/VDS OPS — SURF - BOTTOM

MISSILEX - All Missile firings are covered in Chapter 15.

NOTE: No live ordnance including small arms PACFIRE will be expended without prior clearance and approval from FACSFACJAX. Specific conduct of operations during Northern Right Whale (NRW) calving season is addressed in Chapter 17.

(5) CNO's policy for "Exclusive-Use" scheduling is designed to separate hazardous operations (air combat maneuvering, exercises involving live ordnance, exercises involving surface impacts, and aircraft trailing-wire missions) from non-participants. Non-hazardous activity (intercepts, tracking, maintenance flights, air refueling, AWACS orbits, etc.), may be scheduled "exclusive-use" if airspace is available.

(6) CINCLANTFLT priorities for scheduling of Atlantic Fleet Forces are detailed in Appendix I. Requests received by NAS Jacksonville shall be forwarded to FACSFACJAX for coordination and approval.

c. Mining Exercises. CINCLANT approves all requests to conduct mining exercises at the Charleston Mining Range. FACSFACJAX will schedule air and surface area. Written requests are submitted to CINCLANTFLT, INFO FACSFACJAX.

(1) The Charleston Mining Range is (See Appendix L) defined as Charleston OPAREA SOA 1 XRAY over-flying 11-12/I-K surface to 4,500 FT MSL. When scheduled into the OPAREA for practice mining the area will be assigned "Exclusive Sked." MINEX FAM flights will be assigned "Exclusive Sked." No drops of any type are permitted during a "MINEX FAM." EODMU SIX is the mine recovery agency for the area. During mine recovery operations in area 11J, the area will be assigned "Exclusive Sked" surface to bottom.

(2) Mine raking and scoring is provided by EODMU SIX. It is mandatory that all units using the MINEX Area INFORM EODMU SIX via landline of actual drop times to facilitate raking and scoring. EODMU SIX is responsible for mine recovery. Maximum

h. Small Scale ECM Notification. All operations in the offshore/onshore operating areas which require operation of ACTIVE electronic countermeasures (ECM), including: jamming, chaff dispensing, deception, etc. must have prior approval before COMEX. Approval from JFMOLANT does not constitute permission to conduct exercise in the OPAREA. OPAREA requests must be received 72 hrs prior to event. Units conducting these exercises must comply with Chairman of the Joint Chiefs of Staff Manual 3212.02 (CJCSM 3212.02).

605. Services. Services available in the JAX/CHASN OPAREA are as listed below:

a. LEAR JET

PROVIDER: Flight International (at FACSFACJAX Vacapes)
To schedule call FACSFACJAX
DSN: 942-2113
COMM: (904) 542-2113

MISSIONS: Tractor for TDU, Banner, Hayes-IR, Trackex, ASCM Simulation

SUBMIT REQUESTS: To: FACSFACJAX JACKSONVILLE FL//31//
FACSFACJAX VACAPES VA//24//

b. F-14 Aircraft Services

PROVIDER: COMNAVAIRLANT NORFOLK VA
DSN: 564-4321/2723
COMM: (757) 444-4321/2723

MISSIONS: LINK 4A, LINK 16 (Limited), CAP, Services requiring A/I radar

SUBMIT REQUESTS: To: COMNAVAIRLANT NORFOLK VA//N83G//
Info: FACSFACJAX JACKSONVILLE//31//
COMFITWINGLANT OCEANA VA//30//

c. F/A-18 Aircraft Services

PROVIDER: COMNAVAIRLANT NORFOLK VA
DSN: 564-4321/2723
COMM: (757) 444-4321/2723

MISSIONS: LINK 4A, CAP, AIC

All aircraft entering Rodman target from a VR route and desiring higher than 2,500 FT MSL, must request higher altitude from SEALORD on initial contact. SEALORD will then activate the restricted area above 2,500 FT MSL with JAX TRACON. Prior to departing the restricted area on an IFR flight plan, aircraft will remain VFR within the restricted area until an IFR clearance is received from TRACON on 379.9/319.9/120.75 MHZ.

b. R-2907: Lake George - Surface to and including FL230. Considered active Surface to 11,000 FT MSL. To activate altitudes above 11,000 FT MSL, make request to SEALORD or FACSFACJAX schedules.

c. R-2910: Pinecastle - Surface to and including FL230. Considered active surface to 11,000 FT MSL. To activate altitudes above 11,000 FT MSL, make request to SEALORD or FACSFACJAX schedules.

Range Complex Hours of Operation (Are published via message, all times local)

	STANDARD	DAYLIGHT SAVINGS
(1) Monday and Wednesday -	1000–2000	1200-2200
(2) Tuesday and Thursday -	0900–1700	0900-1700
(3) Friday -	0800-1200	0800-1200

(4) Target usage outside published times may be scheduled through FACSFACJAX in accordance with established notification requirements.

NOTE: It is imperative that target times be scheduled in advance with FACSFACJAX to prevent conflicts. Request for operations outside of normal range hours, excluding weekends and holidays, require twelve (12) hours advance notice. Request for operations for weekends and holidays require twenty-four (24) hours advance notice and a minimum of two (2) hours scheduled range time.

d. Aircraft proceeding to R-2907 and R-2910 shall be released to Pinecastle Targets frequency when entering the Palatka 1 MOA.

(3) Strike ALTRV. Units requesting Strike ALTRV and other training exercises which require local altitude reservations shall contact FACSFACJAX. FACSFACJAX shall coordinate with the appropriate ATC Facilities to schedule an ATC Planning Conference, at least fifteen (15) days prior to commencing operations.

(4) BDU Scheduling. In addition to the procedures outlined in reference (e), target times scheduled for BDU drops must be coordinated with FACSFACJAX one week in advance to allow scheduled closure of affected target for post drop recovery of BDUs. The post drop "Quick Look" report message will be sent immediately by FACSFACJAX in accordance with reference (f). The need for advance scheduling of BDU drops is necessitated by the requirement to close the range while the BDUs are recovered (normally, in excess of one hour per BDU). Thus, squadrons must bear in mind that BDU drops, which are not coordinated with adequate lead time may not be approved, or if scheduled because of operational necessity, may cause other squadrons to lose their scheduled target time.

(5) Burn Index (BI). All ordnance including day smoke spotting charges (CXU 3/4) are subject to the BI restrictions.

(6) Live Ordnance Restrictions. For detailed information, see Chapter 7. Units intending to use the live ordnance impact area in the Pinecastle Target range will contact FACSFACJAX a minimum of three working days prior to desired target time. In addition to information required by paragraph 607a(2), units shall provide the following information:

Number of Aircraft.

Type and amount of ordnance.

Type of delivery.

Number of runs desired.

(7) Five-inch Zunis Special Scheduling. Five-inch Zunis must be specified in the target request or coordinated with FACSFACJAX a minimum of one hour prior to the event. Zunis must be fired as "singles" and no more than two (2) Zunis may be fired

FACSFACJAX. To schedule periods not assigned on the Weekly Target Schedule, notice is required to enable FACSFACJAX to retrieve airspace for the time period from the FAA, man the target and brief personnel.

(2) If a scheduled period on any target becomes unavailable because of fires or other unavoidable circumstances, airborne aircraft may be diverted to other targets. Diverts to other targets must be coordinated by FACSFACJAX. Any one of the following methods may be used:

(a) Circumstances permitting, Pinecastle Targets will coordinate with FACSFACJAX to facilitate rescheduling on other targets.

(b) Airborne aircraft may contact their respective Squadron Duty Officer and have him contact FACSFACJAX for rescheduling on other targets.

(c) Airborne aircraft may contact SEALORD (FACSFACJAX) on 357.0 MHZ and request rescheduling on other targets.

NOTE: Do not call Jacksonville Center or TRACON for information on target availability and scheduling.

d. Cancellation of Scheduled Target Times. When a target time is scheduled and unforeseen circumstances cancel the flight, squadrons involved shall immediately notify FACSFACJAX.

609. Non-FACSFACJAX Areas

a. Aviation units stationed at or deployed to NAS Jacksonville or NS Mayport shall submit daily flight schedules to the appropriate Base Operations Officer in accordance with local station directives.

b. Gator MOAs

(1) Activities must submit their request for Gator MOAs to FACSFACJAX on a day to day basis at least one (1) day prior to intended use.

CHAPTER EIGHT

LASER OPERATIONS

801. LASER Operations at Pinecastle Impact Range

a. LASER Pre-Brief. Prior to lasing at Pinecastle Impact Range (R-2910) a fly-over must be made to ensure there is no encroachment of civilian personnel or standing water puddles in the vicinity of the selected target. Authorized targets are the Red Box, SAM Site, Special Weapons (Main Bull), Live Impact, Mini Convoy, Conventional Day/Night, and Laser Evaluator System Target Board. All aircrews shall be familiar with LASER Hazard Zones and Firing Fans as delineated in the FACSFACJAX Operations Manual. **Upon Check-in with Pinecastle Control for LASER Operations, aircrew will identify the type of laser system to be used.**

b. The conditions of the General Range Procedures and Precautions for the safe use of airborne LASERs and ground-based LASER sections of this chapter shall be met. NAS Jacksonville Detachment (NASJAXDET) LASER range is considered safe for both ground-based and airborne LASER operations, with the following restrictions:

(1) For aircraft systems, only the aircraft-mounted LASER systems listed in Figures 8-40 through 8-43 are permitted. The LASER must be operated from aircraft against the target and within the established firing fans as illustrated in Figures 8-11 through 8-28.

(2) No unprotected personnel will be allowed within the LASER hazard zone (outlined area) per Figures 8-11 through 8-39, unless eyewear of the proper wavelength and Optical Density (OD) are worn as specified in Figures 8-40 through 8-43.

(3) For ground-based systems, only the man-portable LASER systems listed in Figures 8-40 through 8-43 are permitted. The LASER must be operated from Spotting Towers 2-1 and 2-2 against the target area and within the established firing fans as illustrated in Figures 8-11 through 8-21 and 8-29 through 8-39.

NOTE: Figures 8-40 through 8-43 - The Nominal Ocular Hazard Distance (NOHD) is the distance from the LASER at which the energy concentration has dropped below the eye protection

standard from the LASER being considered. Magnifying optics increase the NOHD.

Personnel required to be within the NOHD should have eye protection of the proper wavelength and Optical Density (OD) in place, during LASER operations. Figures 8-40 through 8-43 lists the airborne and ground-based LASER systems, which can be safely operated on the Pinecastle Impact LASER Range, their assigned buffer zones, NOHD, and the OD necessary to protect personnel for both aided and unaided viewing of the beam.

(4) Aircraft-mounted LASER systems will only operate against the appropriate targets utilizing the specified operating fans as illustrated in Figures 8-11 through 8-39.

(5) Lasing shall not begin until the aircraft is within five (5) NM and on the approach zone to the appropriate target.

(6) No unprotected personnel will be allowed within the LASER hazard zone. The LASER hazard zone (Figures 8-21 through 8-39) is 150 feet left or right of the LASER line-of-sight extending from the near to far boundary.

(7) Personnel who are required to be within the LASER hazard zone (Figures 8-21 through 8-39) must wear eye protection of the proper wavelength and OD as specified in Figures 8-40 through 8-43.

(8) Aircraft must be on one of the headings or approach zones and at or above the flight profiles contained in Figures 8-11 through 8-21.

c. NASJAXDET is also considered safe for LASER operations utilizing the LASER Designator/Simulator System (LD/SS) in the simulator mode provided the device is placed on any of the targets within the target area per Figures 8-11 through 8-39.

d. The tripod-mounted LD/SS, MULE, or G/VLLD may be safely operated against the Laser Evaluator System (LES) target board provided the system is positioned along the established run-in heading, not more than 2,300 feet away from the location of the target board.

802. Procedures and Precautions for Airborne Lasers

a. NASJAXDET LASER System Safety Officer (LSSO) shall keep a log showing the date, time and number of firings.

b. The target and the target area must be free of any specular reflectors (mirrors, glass, still water, etc.).

c. The range boundaries must be posted to advise the public of the presence of LASER operations.

d. Unprotected personnel shall not be allowed to view the LASER beam or its specular reflection from within the beam's path and its associated buffer, with or without optics. Such eye protection shall have curved lenses and an OD of six (6) or greater at the LASER wavelength (OD of four (4) is adequate for personnel in other aircraft). The eye protection is adequate to protect personnel under all view conditions for the systems listed in Figures 8-40 through 8-43.

e. All future targets must be free of mirror-like (specular reflective) objects.

f. Only the authorized target may be designated or ranged.

g. Do not designate or range still water, flat glass, mirrors, glazed ice, Plexiglas or any other specular reflector.

h. Do not designate or range other aircraft.

i. Prior to lasing, the target shall be positively identified under the crosshairs of the scope or on the operator's monitor.

j. Lasing shall cease if the operator or range control is dissatisfied with target tracking.

k. Lasing shall cease if unprotected and/or unauthorized personnel enter the LASER hazard zone.

l. A fly-over of the range shall be made to ensure that no unprotected and/or unauthorized personnel are in the LASER hazard zone.

m. Lasing shall cease if unprotected and/or unauthorized aircraft enter the operations area or the buffer zone between the lasing aircraft and the target. The buffer zone is defined as a

five-degree (half angle) cone surrounding the LASER line-of-sight to the target with the lasing aircraft at the apex.

n. Two-way communications must be maintained between the LASER system operators and all affected range personnel.

o. LASER operations shall take place only on laser approved ranges established in accordance with SPAWARINST 5100.12B.

p. No special precautions are necessary for firing LASERs during rain, fog, or snowfall. Ranges shall be closed to LASER operations if water begins to pond either on the ground, snow or ice. Lasing operations shall cease when standing water is observed.

803. Procedures and Precautions for Ground-Based Lasers

a. NASJAXDET LASER System Safety Officer (LSSO) shall keep a log showing the date, time, place and number of LASER firings.

b. The target and the target area must be free of any specular reflectors (mirrors, glass, still water, etc.).

c. The range boundaries must be posted to advise the public of the presence of LASER operations.

d. All future targets must be free of mirror-like (specular reflective) objects.

e. Only the authorized target may be designated or ranged. The LASER must always be pointed down-range (toward the target).

f. All personnel in the immediate area of the LASER firing position must be behind the operator while the LASER is in use. LASER eye protection is not required for LASER operators or observation personnel viewing the target area with or without binoculars when they remain behind the operator. However, personnel shall never wander into the beam path, its associated buffer, or the LASER target area, without appropriate eye protection. Such eye protection shall have curved lenses and an optical density of six (6) or greater at the LASER wavelength. This eye protection is adequate to protect personnel under all viewing conditions for the systems listed in Figures 8-40 through 8-43.

g. Only authorized targets may be designated or ranged.

h. Do not designate or range still water, flat glass, mirrors, glazed ice, Plexiglas, or any other specular reflector.

i. Do not designate or range aircraft.

j. The target must be positively identified under the crosshairs of the scope or on the operator's monitor prior to activation of the LASER.

k. Lasing shall cease if the operator or the range control is dissatisfied with target tracking.

l. Lasing shall cease when unprotected and/or unauthorized personnel enter the LASER hazard zone.

m. The LASER will not be operated or used experimentally outside the range area without such operation being specifically authorized by the local LASER Safety Officer, comm: (352)759-2929).

n. The LASER exit port of all ground-based LASER systems will be covered by an opaque dust cover when the LASER is located outside the range area or is not in use.

o. No special precautions are necessary firing LASERs during rain, fog, or snowfall. Lasing operations shall cease when standing water is observed. Ranges shall be closed to LASER operations if water begins to pond on the ground, or if snow, or ice is present.

p. LASER operations personnel shall read the range SOP periodically and agree to follow it at all times.

q. Personnel must report to their supervisor immediately any suspected injury or defective equipment (e.g., misalignment of the LASER beam with the pointing optics) so the appropriate action can be taken.

r. Operation shall be permitted only on the LASER approved range established in accordance with SPAWARINST 5100.12B.

s. Two-way communications must be maintained between the LASER system operators and all affected range personnel.

804. LASER Operations in OPAREA

a. References

(1) Space and Naval Warfare Systems Command (SPAWAR-00F), Open Ocean Laser Safety, Recommendations for Lasing U. S. Naval Ships During Training exercises of 30 September 1993
(2) Laser Safety Review Board Minutes of 13 August 1997; The Nominal Ocular Hazard Distances (NOHD) and Optical Densities (OD)
(3) Laser Safety on Ranges and in Other Outdoor Areas, MIL-HDBK-828 of 15 April 1993.
(4) SPARWARINST 5100.12B

805. General

a. Purpose. To establish standard operating procedures for laser operations in the FACSFACJAX (FFJ) AOR.

b. Discussion. The SH-60B and HH-60H Seahawk helicopters are capable of carrying the AN/AAS-44 Laser Targeting/Designator Rangefinder (LTDR) and AGM-114 Hellfire missiles. Due to the power and capabilities of the AN/ASS-44 LTDR these special procedures are established for laser operations in accordance with references (a), (b), (c), and (d).

c. Scope. This chapter pertains to laser operations in the FACSFACJAX AOR by aircraft utilizing the AN/AAS-44 LTDR. Other laser systems should be evaluated on a case by case basis for addition to this chapter.

806. Definitions.

Green Range for Lasing: Announcement made by FACSFACJAX Range Control Officer (RCO) that all requirements of this document have been satisfied and participating aircraft are cleared to conduct laser operations. *This does not grant permission to arm or for firing of any ordnance.* Specific hazard zones for any ordnance must be met in accordance with a published Letter of Instruction (LOI).

Laser Eye Protection (LEP): Goggles or visors required for participants in laser operations. Each laser has specific requirements for the frequency and optical density that LEP must

cover. Additionally, LEP must be inspected periodically. Pitting, cracking, and scratches on the surface may render the LEP useless.

Laser System Safety Officer (LSSO): An individual, designated by the Officer Conducting Exercise (OCE), trained in laser safety and certified Cat I (Technical and Management) or Cat II (Management only). A LSSO from each unit conducting laser operations shall be present at FACSFAC or in the lasing aircraft during laser operations.

Laser Training Range (LTR): NOTMARED area in which laser operations are conducted. This range encompasses the target area plus required safety buffer areas to account for the laser's Nominal Ocular Hazard Distance (NOHD).

Nominal Ocular Hazard Distance (NOHD): Distance along laser beam that intrabeam viewing will cause injury.

Officer Conducting Exercise (OCE): Officer in charge of Laser Operations. Gives the command "Clear to Arm", "Clear to Lase". This command may be delegated as per the units SOP/LOI for the event. The OCE or designated representative shall be present at FACSFACJAX.

Optical Density (OD): Amount of a specific wavelength filtered by LEP.

Red Range: This call, made at any time and by any unit, cancels any clearance to lase.

807. Laser Training Range (LTR) Location.

Figures 8-44 and 8-45 contain a diagram and coordinates for the LTR. Figure 8-44 covers the period between 01 April and 31 November, Non-Right Whale Season. Figure 8-45 locates the LTR further East for Right Whale Season from 01 December to 31 March.

808. Laser Training Procedures.

Prior to entering the Warning Area, aircraft shall contact SEALORD Control on 133.95 VHF or 267.5 UHF with request to enter the LTR. SEALORD Control will clear the aircraft onto the range and switch the aircraft to Bristol Control on a pre-briefed discreet frequency for commencement of aircraft LTR clearance.

After completing range clearance and ensuring range is clear of contacts, the aircraft commander will request “Green Range for Lasing”.

809. Laser Training Range (LTR) Clearance.

The LTR is segmented allowing fouled segments to be restricted from use. Range clearance aircraft will report any contacts in the vicinity of the LTR to Bristol Control. If, after conducting range clearance, there are no contacts within the LTR, then the full LTR is authorized. If any contact is within a segment of the LTR, but other segment(s) are clear, then the RCO may grant “Green Range for Lasing” specifically for the clear segment(s) only by calling both the points of the permitted segment(s) and the firing bearings allowed. The RCO will issue “Green Range for Lasing” after participating aircraft reports range or specific segments clear of contacts, the weather meets requirements, and all participants are wearing Laser Eye Protection (LEP).

810. Lasing.

Lasing aircraft shall call “In Hot” at the beginning of each lasing run. Before each use of the laser, lasing aircraft shall call “Laser On” and after each use of the laser they shall call “Laser Off”. At the end of each lasing run, the lasing aircraft shall call “Off Cold”. Bristol control shall maintain a log of all pertinent events during the exercise.

NOTE: Any participant that spots a fouler entering the range shall call “Red Range”.

811. Training Completion.

After completion of laser operations, RCO will issue “Red Range” and ensure all participants are informed events are complete.

812. Flight Profiles.

a. Lasing aircraft shall only lase within allowed firing bearings from aircraft to target. If the full LTR is authorized, firing bearings are from 045 degrees true clockwise to 135 degrees true. If “Green Range for Lasing” is authorized for only

one or more segments of the LTR, then the restricted firing bearing will be specified by the RCO and shall be as described in Figure 8-44 or Figure 8-45 as appropriate.

b. Laser operators shall ensure the laser is never fired above the horizon. As range from the target increases, it will be necessary to increase altitude to maintain laser reticle below the horizon. This altitude will vary depending upon height of target point above the water line. At no time shall aircraft operate below minimum altitudes specified in Squadron standard operating procedures.

813. Safety.

a. Pre-Brief. Before conducting Laser Operations, all participants shall receive a brief specifying conduct of exercise, LEP requirements, role of each participant, and outline of LTR. Prior to commencement of each range period, FACSFAC shall ensure participants acknowledge that they have read and understand this section of the FACSFACJAX Operations Manual.

b. LEP. The AN/AAS-44 LTDR transmit on a wavelength of 1064 nanometers and requires LEP with an OD of 4.0 or greater in that wavelength for unaided viewing. Any aided viewing requires an OD of 5.5 or greater in the 1064 nanometer wavelength and must be specifically cleared by FACSFAC (see paragraph 11.h.). All personnel on participating units and aircraft within the LTR shall wear appropriate LEP. Additionally, personnel shall periodically perform inspections of LEP.

c. Range Clearance. Range clearance will be the primary responsibility of the lasing aircraft or a supporting asset if the lasing aircraft does not have onboard radar. All units on the range however, have the responsibility of reporting any potential range foulers to Bristol Control and if the fouler may be on an active segment of the LTR, immediately call “Red Range”.

d. Notice to Mariners. FACSFAC shall issue a Notice to Mariners to cover the affected target area during laser operations.

e. Laser Employment. The lasing aircraft shall only lase on a positively identified target within the approved laser bearings. Lasing shall be discontinued if the Forward Looking Infra-Red (FLIR) system is not maintaining steady lock on the

target. It is the ultimate responsibility of the aircraft commander to ensure the safe employment of the laser.

f. Communications. If at any time participating aircraft are not able to communicate with Bristol Control, they shall assume Red Range and discontinue lasing operations until communication is re-established. Participating aircraft may normally relay information from Bristol Control to participating surface units.

g. Target Preparation. Any target used for laser operations shall be inspected for specular reflection hazards. All bright-work, chrome, mirrors, glass, or similar reflective surfaces shall be covered or removed prior to laser operations. Paper or thin plywood is an acceptable covering.

h. Aided Viewing. Any aided viewing of the target using binoculars or any other optic must be cleared through the LSSO to ensure proper NOHD and LEP requirements are followed

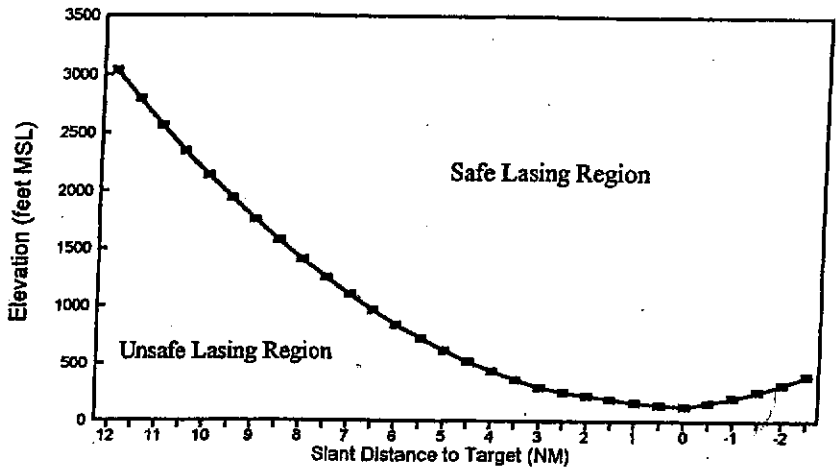
814. Weather Requirements.

Lasing operations shall only be conducted when cloud ceiling and visibility allow VFR operations. The FLIR operator shall have sufficient visibility to identify the target before lasing. Lasing operations shall not be conducted during flat sea state conditions due to specular reflection hazards.

LASER SAFETY SURVEY REPORT
PINECASTLE AIRCREW COMBAT TRAINING RANGE (ACTR)

LTA "Mini Convoy" Aerial Lasing

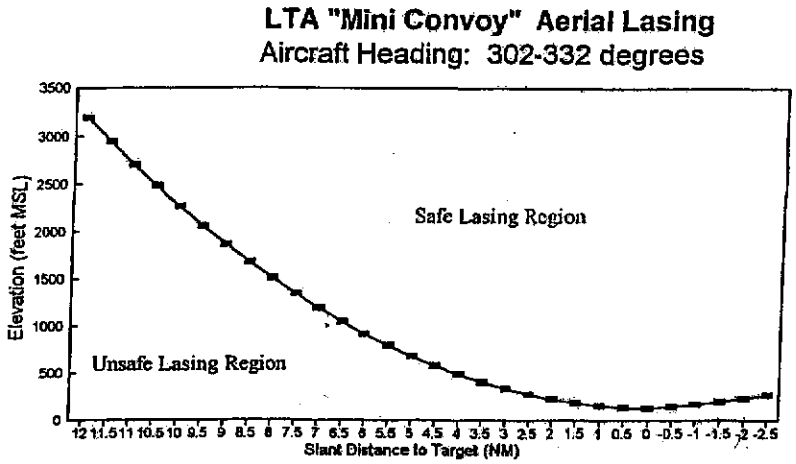
Aircraft Heading: 122-152 degrees



AERIAL LASING PROFILE

SLANT DISTANCE TO TARGET (nmi)	MINIMUM SAFE LASING ALTITUDE (feet MSL)	SLANT DISTANCE TO TARGET (nmi)	MINIMUM SAFE LASING ALTITUDE (feet MSL)
12	3030	4.5	515
11.5	2790	4	430
11	2560	3.5	356
10.5	2340	3	292
10	2131	2.5	252
9.5	1933	2	217
9	1744	1.5	187
8.5	1566	1	162
8	1399	0.5	141
7.5	1241	0	125
7	1094	-0.5	157
6.5	958	-1	200
6	832	-1.5	253
5.5	716	-2	316
5	610	-2.5	390

LASER SAFETY SURVEY REPORT
PINECASTLE AIRCREW COMBAT TRAINING RANGE (ACTR)



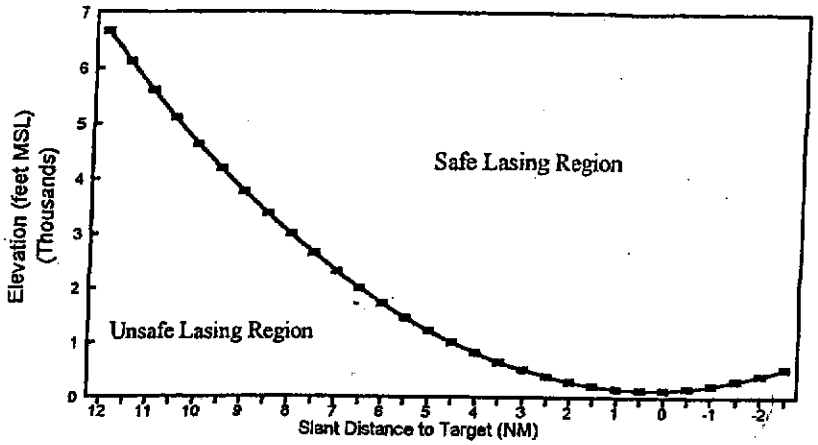
AERIAL LASING PROFILE

SLANT DISTANCE TO TARGET (nmi)	MINIMUM SAFE LASING ALTITUDE (feet MSL)	SLANT DISTANCE TO TARGET (nmi)	MINIMUM SAFE LASING ALTITUDE (feet MSL)
12	3186	4.5	574
11.5	2940	4	483
11	2703	3.5	402
10.5	2477	3	331
10	2262	2.5	271
9.5	2057	2	221
9	1862	1.5	181
8.5	1677	1	152
8	1503	0.5	133
7.5	1339	0	125
7	1186	-0.5	144
6.5	1043	-1	168
6	910	-1.5	196
5.5	788	-2	229
5	675	-2.5	267

LASER SAFETY SURVEY REPORT
PINECASTLE AIRCREW COMBAT TRAINING RANGE (ACTR)

LTA "Sam Site" Aerial Lasing

Aircraft Heading: 122-152 degrees

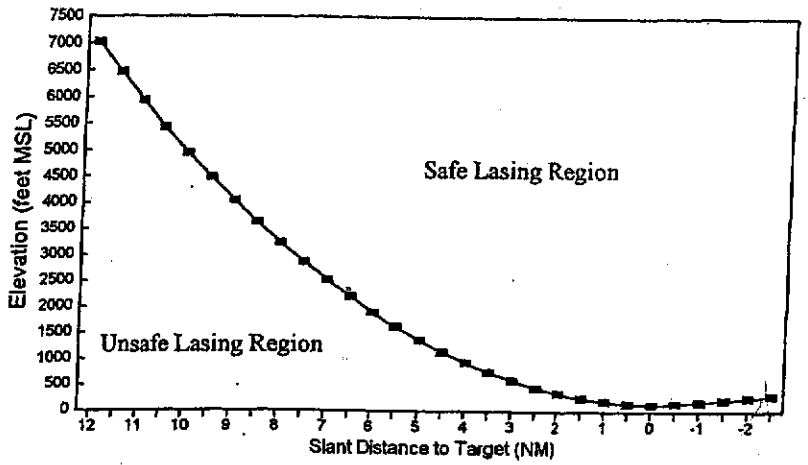


AERIAL LASING PROFILE

SLANT DISTANCE TO TARGET (NMI)	MINIMUM SAFE LASING ALTITUDE (FEET MSL)	SLANT DISTANCE TO TARGET (NMI)	MINIMUM SAFE LASING ALTITUDE (FEET MSL)
12	6654	4.5	1001
11.5	6114	4	810
11	5597	3.5	643
10.5	5104	3	499
10	4634	2.5	379
9.5	4187	2	281
9	3764	1.5	207
8.5	3363	1	157
8	2987	0.5	137
7.5	2633	0	125
7	2303	-0.5	160
6.5	1996	-1	217
6	1712	-1.5	298
5.5	1452	-2	403
5	1215	-2.5	530

LASER SAFETY SURVEY REPORT
PINECASTLE AIRCREW COMBAT TRAINING RANGE (ACTR)

LTA "Sam Site" Aerial Lasing
Aircraft Heading: 302-332 degrees

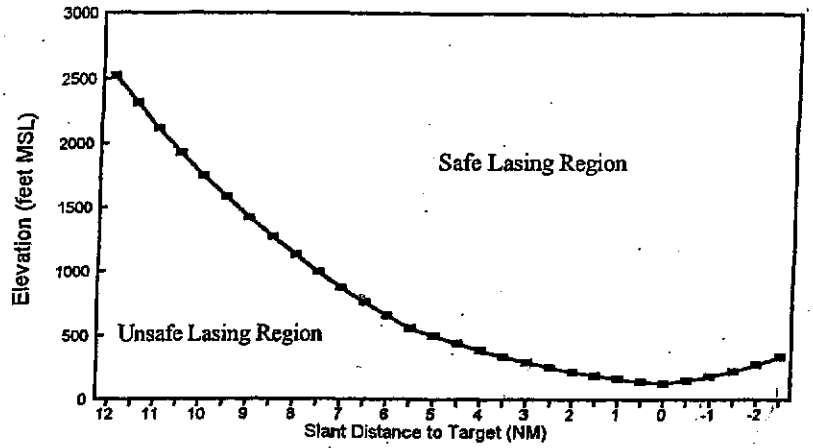


AERIAL LASING PROFILE

SLANT DISTANCE TO TARGET (NM)	MINIMUM SAFE LASING ALTITUDE (FEET MSL)	SLANT DISTANCE TO TARGET (NM)	MINIMUM SAFE LASING ALTITUDE (FEET MSL)
12	7017	4.5	1137
11.5	6462	4	931
11	5930	3.5	749
10.5	5422	3	590
10	4936	2.5	454
9.5	4474	2	342
9	4036	1.5	252
8.5	3620	1	187
8	3228	0.5	144
7.5	2860	0	125
7	2514	-0.5	149
6.5	2192	-1	178
6	1893	-1.5	213
5.5	1618	-2	253
5	1365	-2.5	302

LASER SAFETY SURVEY REPORT
PINECASTLE AIRCREW COMBAT TRAINING RANGE (ACTR)

LTA "Red Box" Aerial Lasing
Aircraft Heading: 122-152 degrees

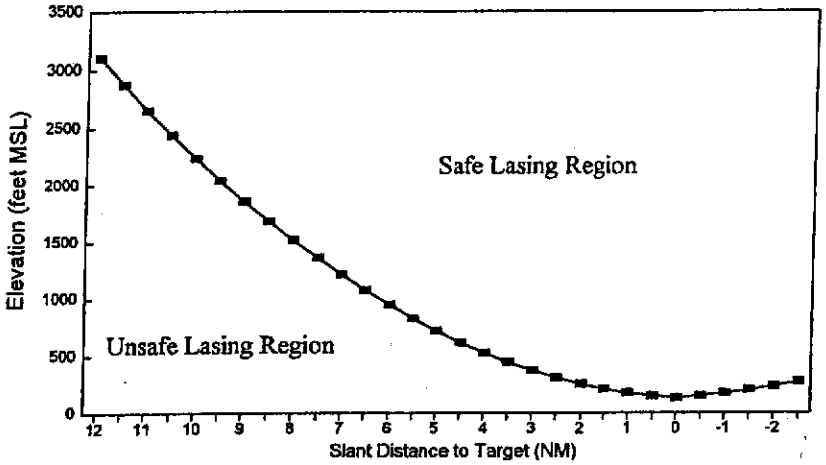


AERIAL LASING PROFILE

SLANT DISTANCE TO TARGET (NMI)	MINIMUM SAFE LASING ALTITUDE (FEET MSL)	SLANT DISTANCE TO TARGET (NMI)	MINIMUM SAFE LASING ALTITUDE (FEET MSL)
12	2519	4.5	437
11.5	2312	4	383
11	2114	3.5	335
10.5	1926	3	291
10	1747	2.5	252
9.5	1577	2	217
9	1417	1.5	187
8.5	1266	1	162
8	1124	0.5	141
7.5	992	0	125
7	869	-0.5	148
6.5	755	-1	180
6	651	-1.5	222
5.5	557	-2	273
5	495	-2.5	333

LASER SAFETY SURVEY REPORT
PINECASTLE AIRCREW COMBAT TRAINING RANGE (ACTR)

LTA "Red Box" Aerial Lasing
Aircraft Heading: 302-332 degrees

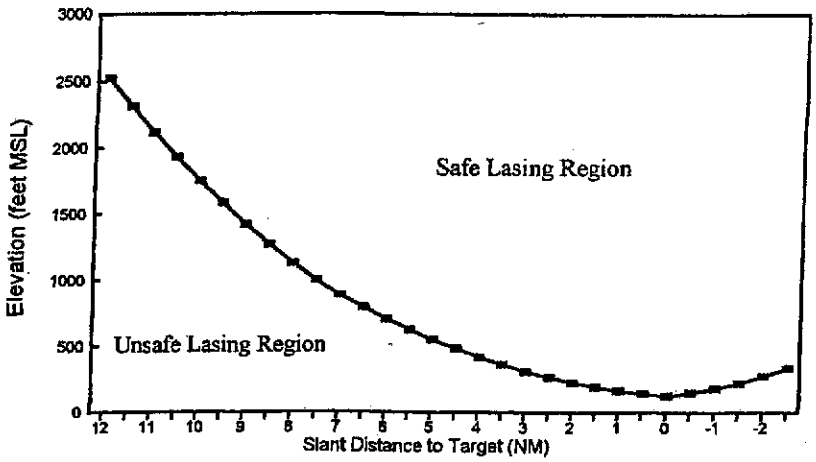


AERIAL LASING PROFILE

SLANT DISTANCE TO TARGET (NMI)	MINIMUM SAFE LASING ALTITUDE (FEET MSL)	SLANT DISTANCE TO TARGET (NMI)	MINIMUM SAFE LASING ALTITUDE (FEET MSL)
12	3101	4.5	612
11.5	2870	4	520
11	2648	3.5	438
10.5	2435	3	366
10	2232	2.5	302
9.5	2038	2	248
9	1853	1.5	203
8.5	1678	1	168
8	1512	0.5	142
7.5	1356	0	125
7	1208	-0.5	144
6.5	1070	-1	168
6	942	-1.5	196
5.5	822	-2	229
5	712	-2.5	267

LASER SAFETY SURVEY REPORT
PINECASTLE AIRCREW COMBAT TRAINING RANGE (ACTR)

LTA "Main Bull" Aerial Lasing
Aircraft Heading: 122-152 degrees

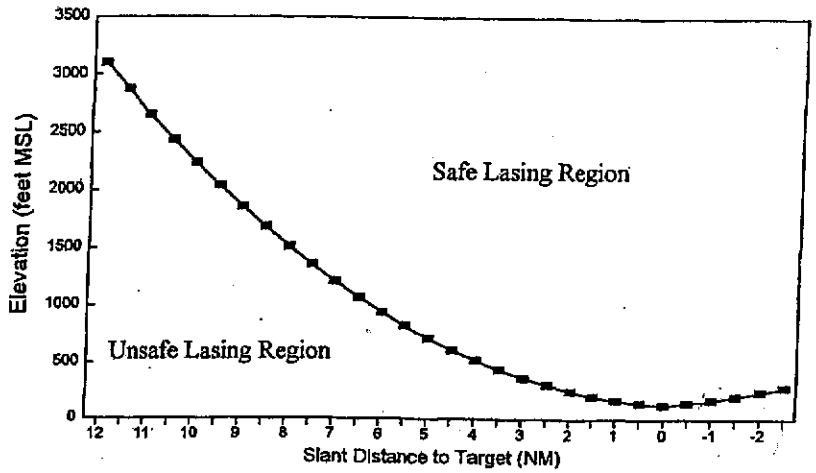


AERIAL LASING PROFILE

SLANT DISTANCE TO TARGET (NMI)	MINIMUM SAFE LASING ALTITUDE (FEET MSL)	SLANT DISTANCE TO TARGET (NMI)	MINIMUM SAFE LASING ALTITUDE (FEET MSL)
12	2519	4.5	480
11.5	2312	4	418
11	2114	3.5	361
10.5	1926	3	310
10	1747	2.5	264
9.5	1577	2	225
9	1417	1.5	191
8.5	1266	1	163
8	1124	0.5	141
7.5	992	0	125
7	882	-0.5	148
6.5	790	-1	180
6	704	-1.5	222
5.5	624	-2	273
5	549	-2.5	333

LASER SAFETY SURVEY REPORT
PINECASTLE AIRCREW COMBAT TRAINING RANGE (ACTR)

LTA "Main Bull" Aerial Lasing
Aircraft Heading: 302-332 degrees

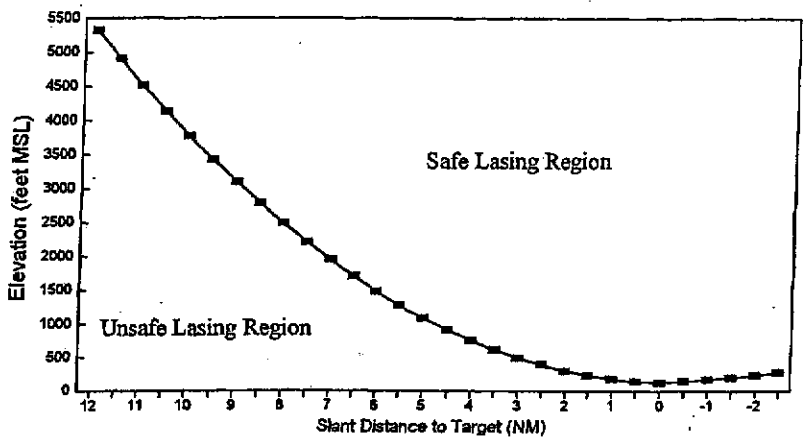


AERIAL LASING PROFILE

SLANT DISTANCE TO TARGET (NMI)	MINIMUM SAFE LASING ALTITUDE (FEET MSL)	SLANT DISTANCE TO TARGET (NMI)	MINIMUM SAFE LASING ALTITUDE (FEET MSL)
12	2666	4.5	553
11.5	2470	4	475
11	2283	3.5	404
10.5	2103	3	341
10	1931	2.5	285
9.5	1767	2	238
9	1611	1.5	198
8.5	1462	1	166
8	1322	0.5	142
7.5	1188	0	125
7	1063	-0.5	145
6.5	946	-1	171
6	836	-1.5	203
5.5	734	-2	240
5	640	-2.5	283

LASER SAFETY SURVEY REPORT
PINECASTLE AIRCREW COMBAT TRAINING RANGE (ACTR)

LTA "Live Ordnance" Aerial Lasing
Aircraft Heading: 122-152 degrees

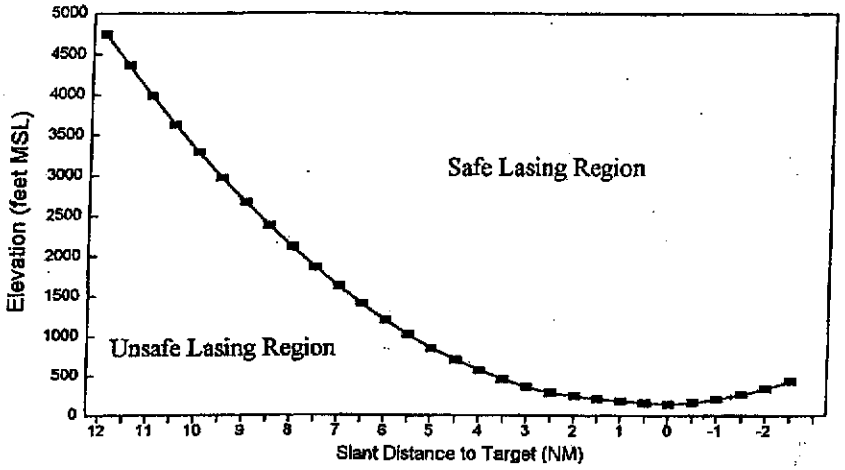


AERIAL LASING PROFILE

SLANT DISTANCE TO TARGET (NMI)	MINIMUM SAFE LASING ALTITUDE (FEET MSL)	SLANT DISTANCE TO TARGET (NMI)	MINIMUM SAFE LASING ALTITUDE (FEET MSL)
12	5471	4.5	971
11.5	5050	4	809
11	4647	3.5	664
10.5	4260	3	537
10	3891	2.5	427
9.5	3539	2	334
9	3205	1.5	258
8.5	2888	1	200
8	2588	0.5	159
7.5	2305	0	135
7	2039	-0.5	153
6.5	1791	-1	176
6	1560	-1.5	205
5.5	1347	-2	240
5	1150	-2.5	279

LASER SAFETY SURVEY REPORT
PINECASTLE AIRCREW COMBAT TRAINING RANGE (ACTR)

LTA "Live Ordnance" Aerial Lasing
Aircraft Heading: 302-332 degrees

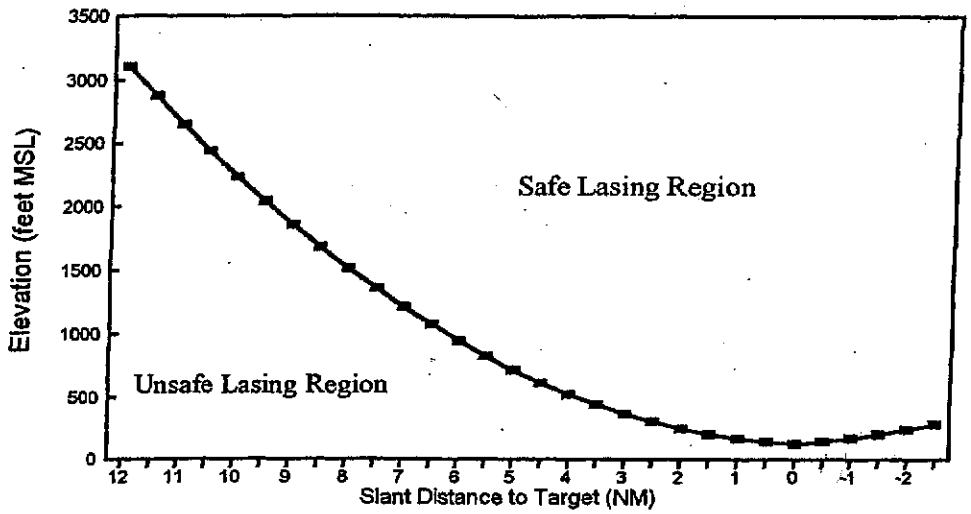


AERIAL LASING PROFILE

SLANT DISTANCE TO TARGET (NMI)	MINIMUM SAFE LASING ALTITUDE (FEET MSL)	SLANT DISTANCE TO TARGET (NMI)	MINIMUM SAFE LASING ALTITUDE (FEET MSL)
12	4742	4.5	697
11.5	4351	4	566
11	3978	3.5	452
10.5	3622	3	355
10	3284	2.5	280
9.5	2962	2	240
9	2658	1.5	205
8.5	2371	1	176
8	2101	0.5	153
7.5	1849	0	135
7	1614	-0.5	159
6.5	1396	-1	200
6	1195	-1.5	258
5.5	1015	-2	334
5	846	-2.5	427

LASER SAFETY SURVEY REPORT
PINECASTLE AIRCREW COMBAT TRAINING RANGE (ACTR)

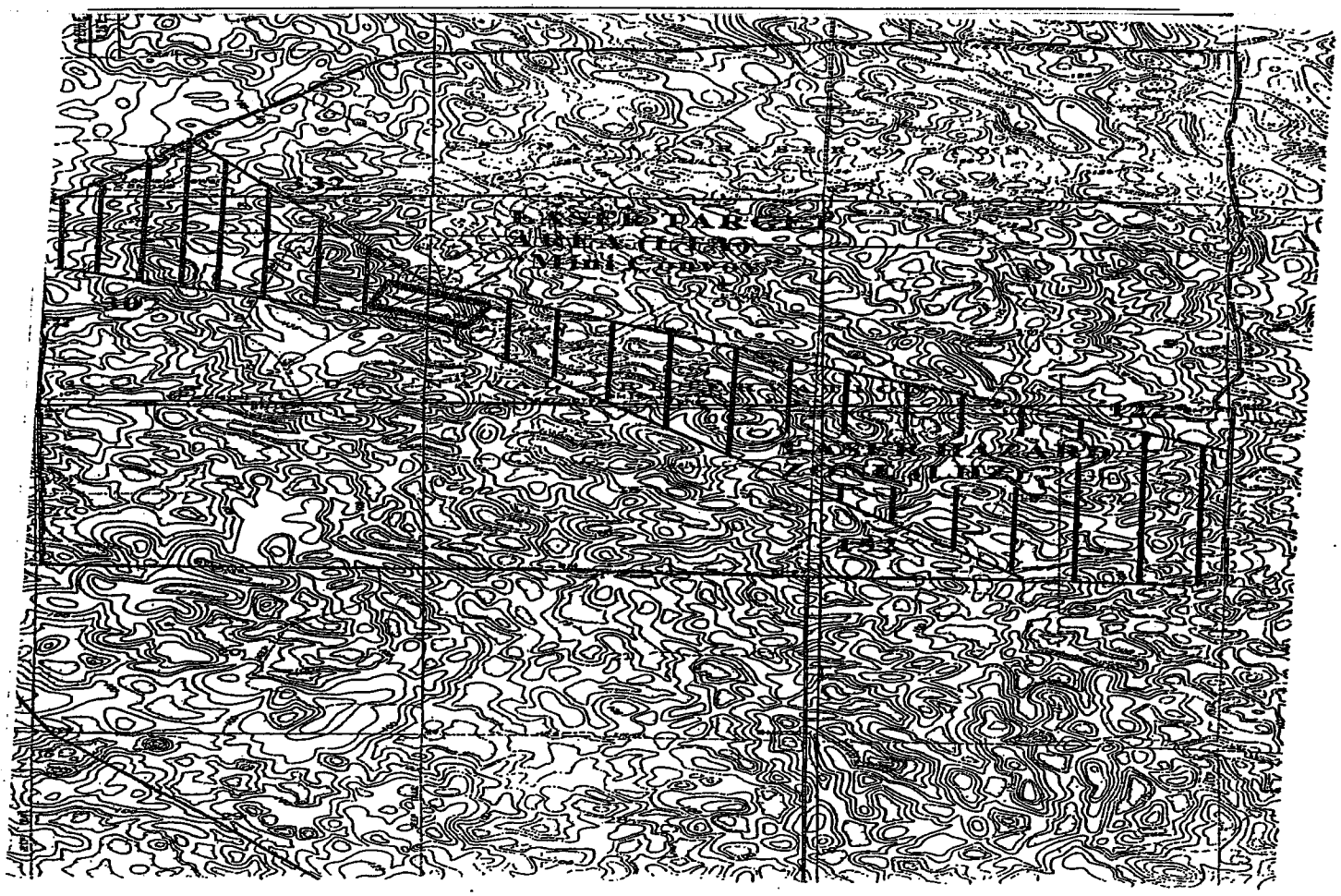
LTA "LSVRS Board" Aerial Lasing
Aircraft Heading: 302-332 degrees



AERIAL LASING PROFILE

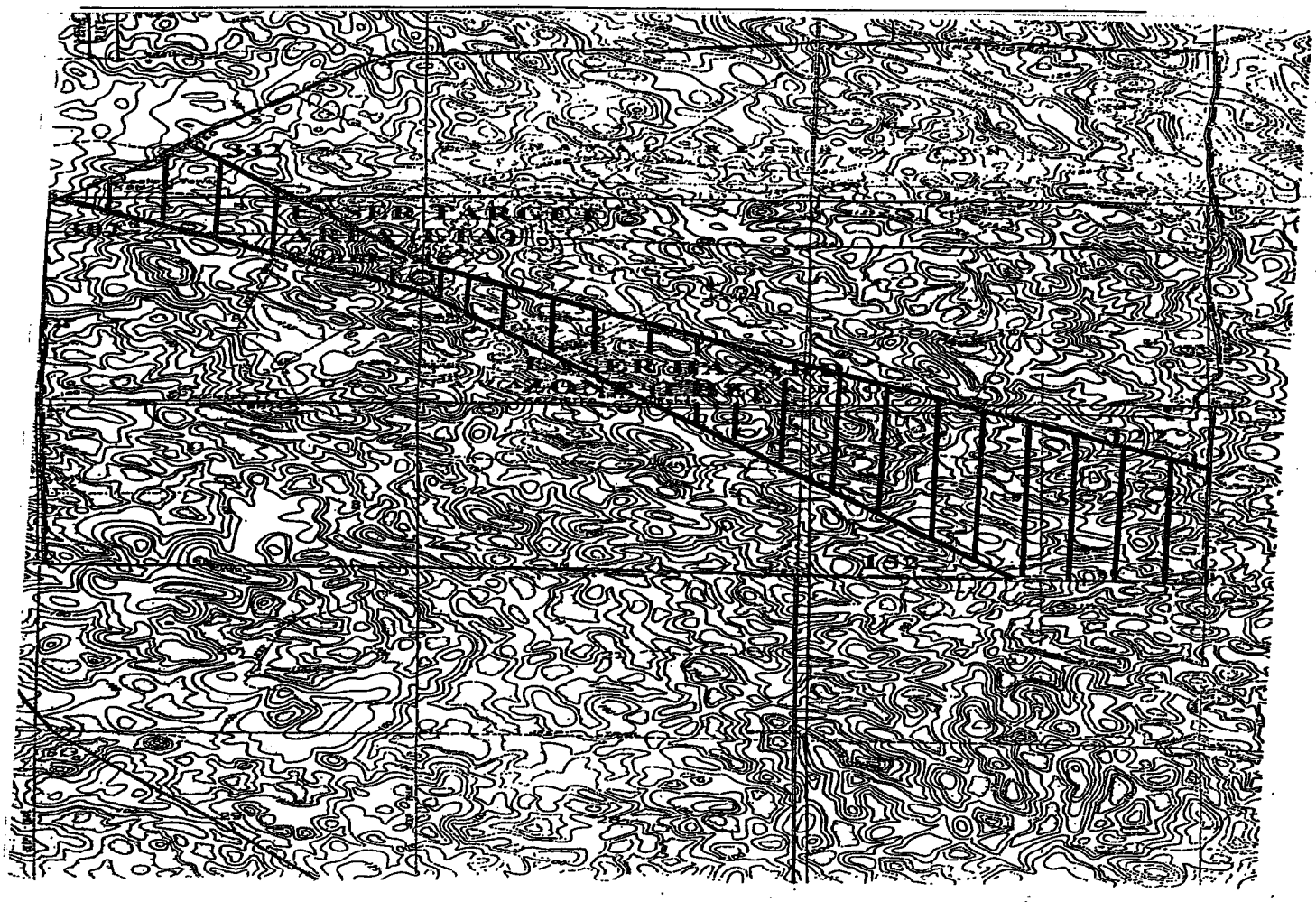
SLANT DISTANCE TO TARGET (NMI)	MINIMUM SAFE LASING ALTITUDE (FEET MSL)	SLANT DISTANCE TO TARGET (NMI)	MINIMUM SAFE LASING ALTITUDE (FEET MSL)
12	3101	4.5	612
11.5	2870	4	520
11	2648	3.5	438
10.5	2435	3	366
10	2232	2.5	302
9.5	2038	2	248
9	1853	1.5	203
8.5	1678	1	168
8	1512	0.5	142
7.5	1356	0	125
7	1208	-0.5	145
6.5	1070	-1	171
6	942	-1.5	203
5.5	822	-2	240
5	712	-2.5	283

LASER SAFETY SURVEY REPORT
PINECASTLE AIRCREW COMBAT TRAINING RANGE (ACTR)



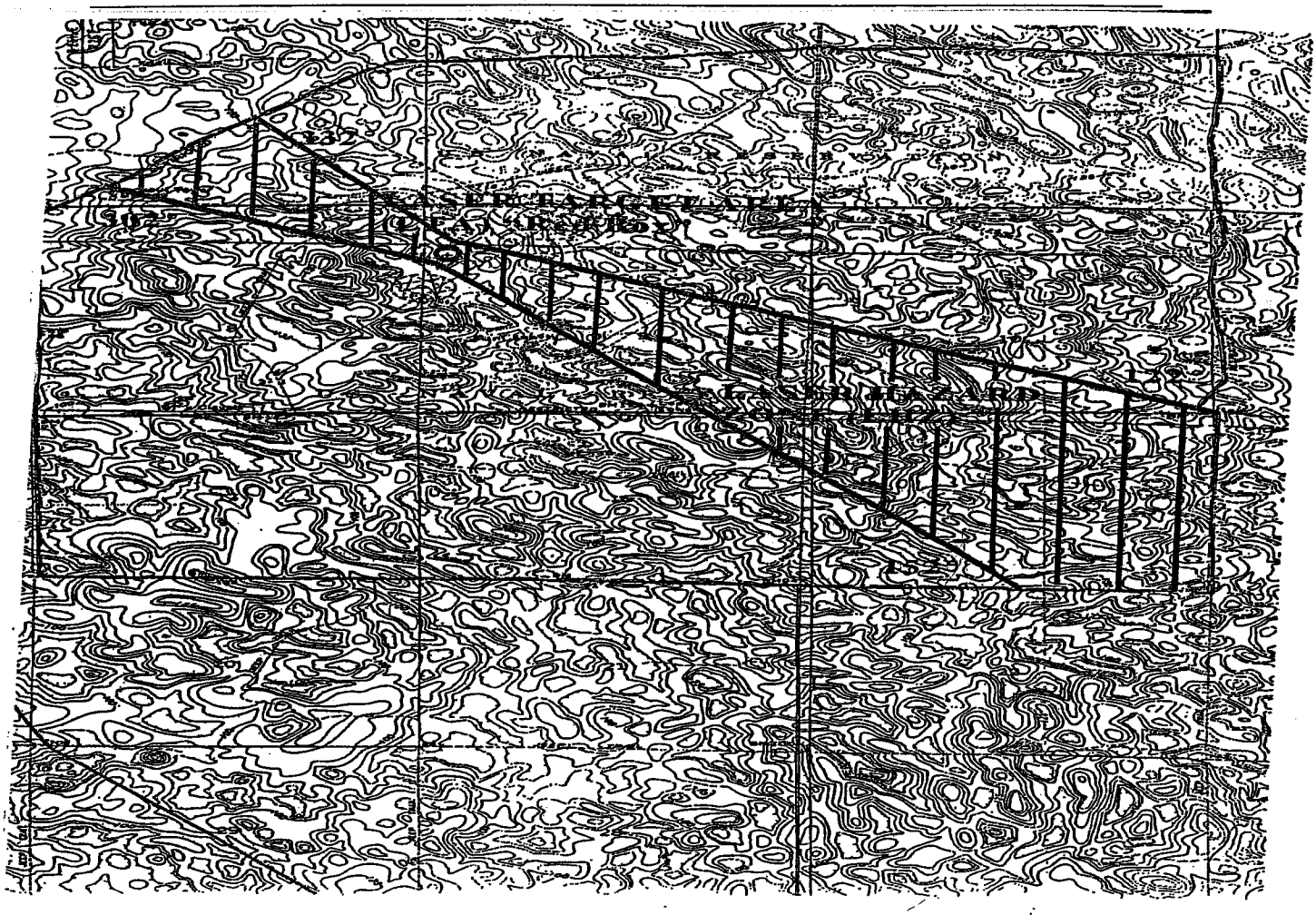
Page: A-1	1	**Figure A-1**	**Heading Availability: 122° clockwise to 152°, and 302° clockwise to 332° true north**
Scale: 1 grid = 1 km	**Grid North**	**Laser Surface Hazard Zone LTA "Mini Convoy" from Aircraft**	**Maximum Buffer Zone Angle: 5 mrad**

LASER SAFETY SURVEY REPORT
PINECASTLE AIRCREW COMBAT TRAINING RANGE (ACTR)



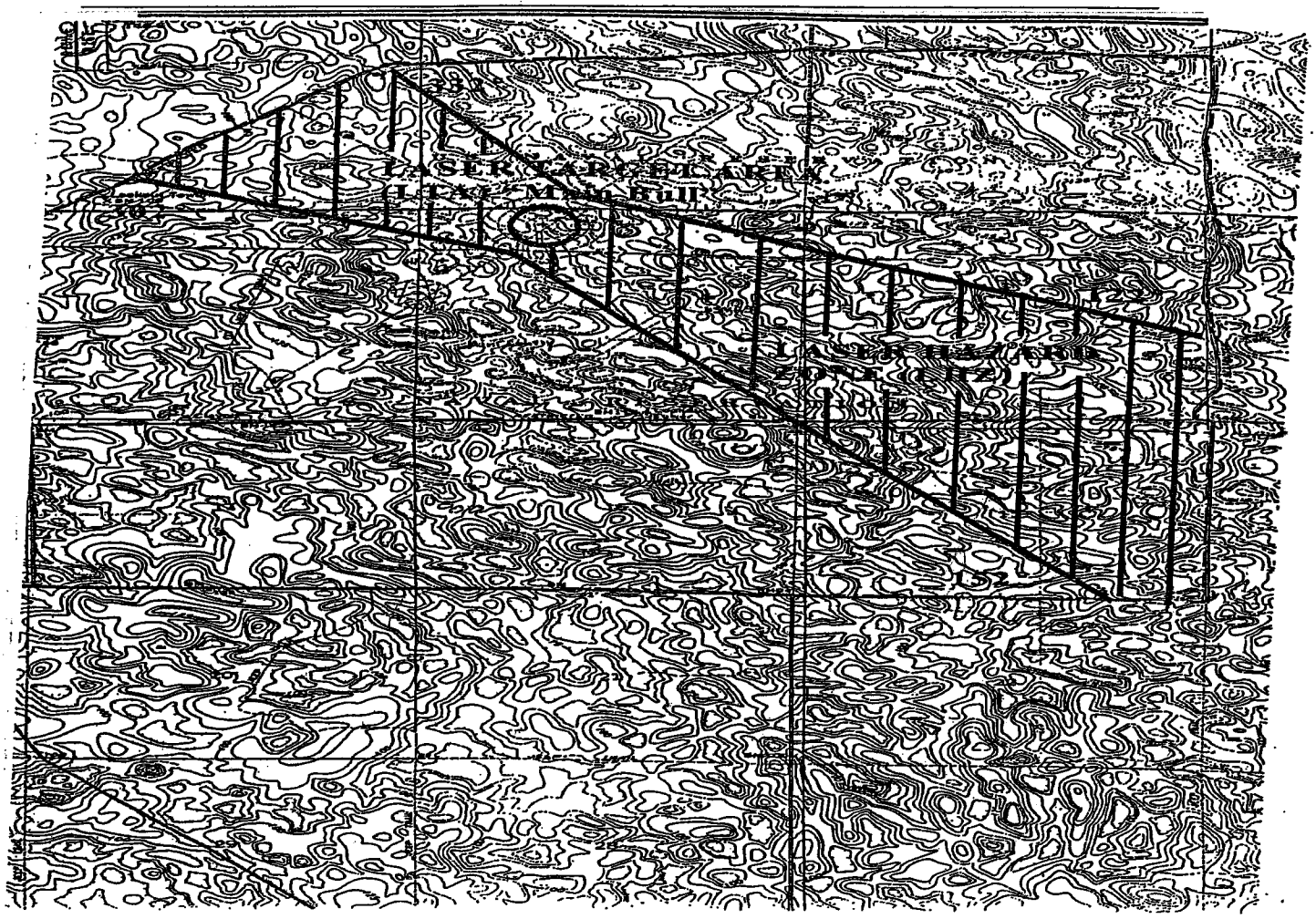
Page: A2	1	**Figure A-2**	**Heading Availability: 122° clockwise to 152°, and 302° clockwise to 332° true north**
Scale: 1 grid = 1 km	Grid North	Laser Surface Hazard Zone LTA "Sam Site" from Aircraft	Maximum Buffer Zone Angle: 5 mrad

LASER SAFETY SURVEY REPORT
PINECASTLE AIRCREW COMBAT TRAINING RANGE (ACTR)



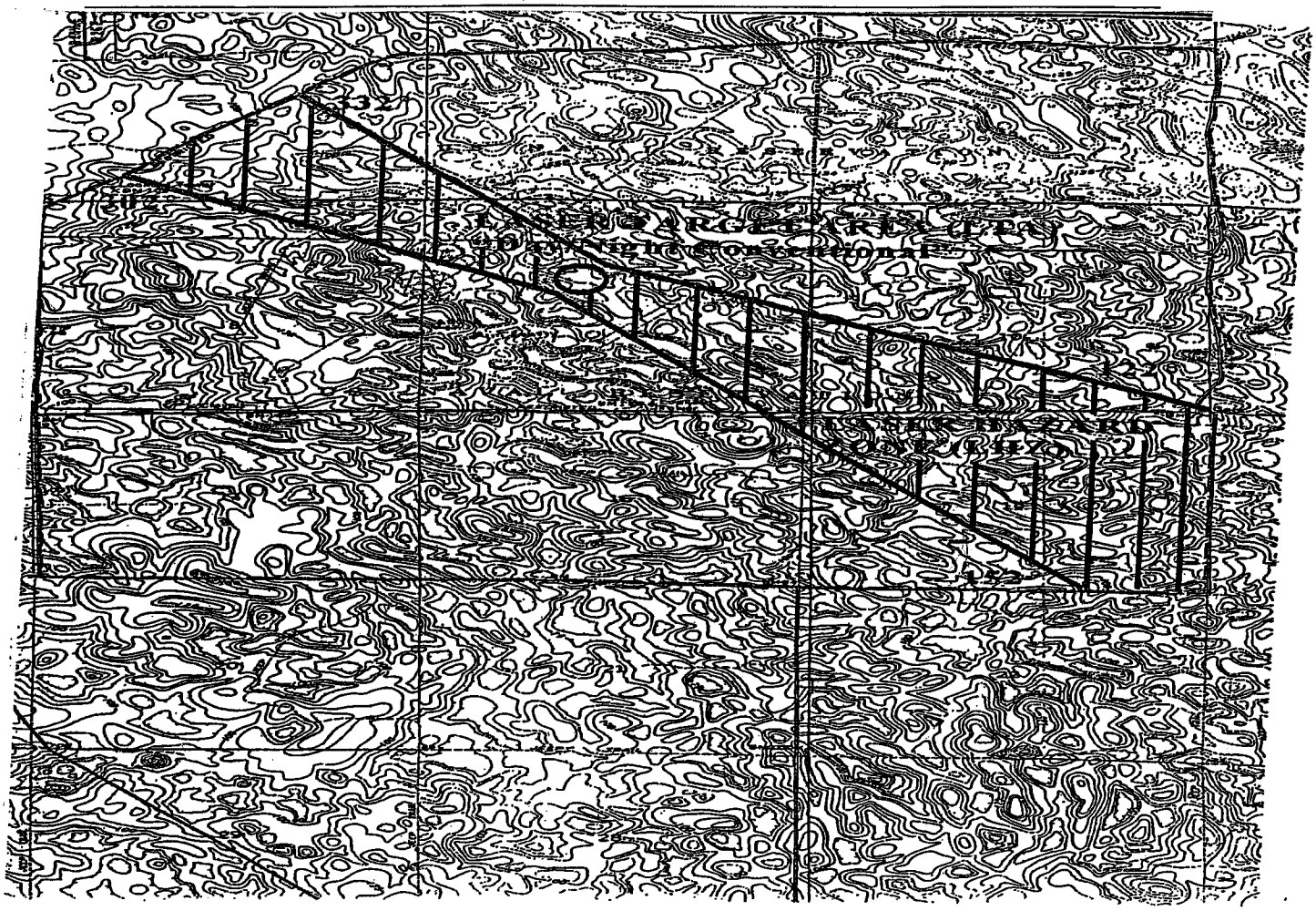
Page: A-3	1	**Figure A-3**	**Heading Availability: 122° clockwise to 152°, and 302° clockwise to 332° true north**
Scale: 1 grid = 1 km	Grid North	Laser Surface Hazard Zone LTA "Red Box" from Aircraft	Maximum Buffer Zone Angle: 5 mrad

LASER SAFETY SURVEY REPORT
PINECASTLE AIRCREW COMBAT TRAINING RANGE (ACTR)



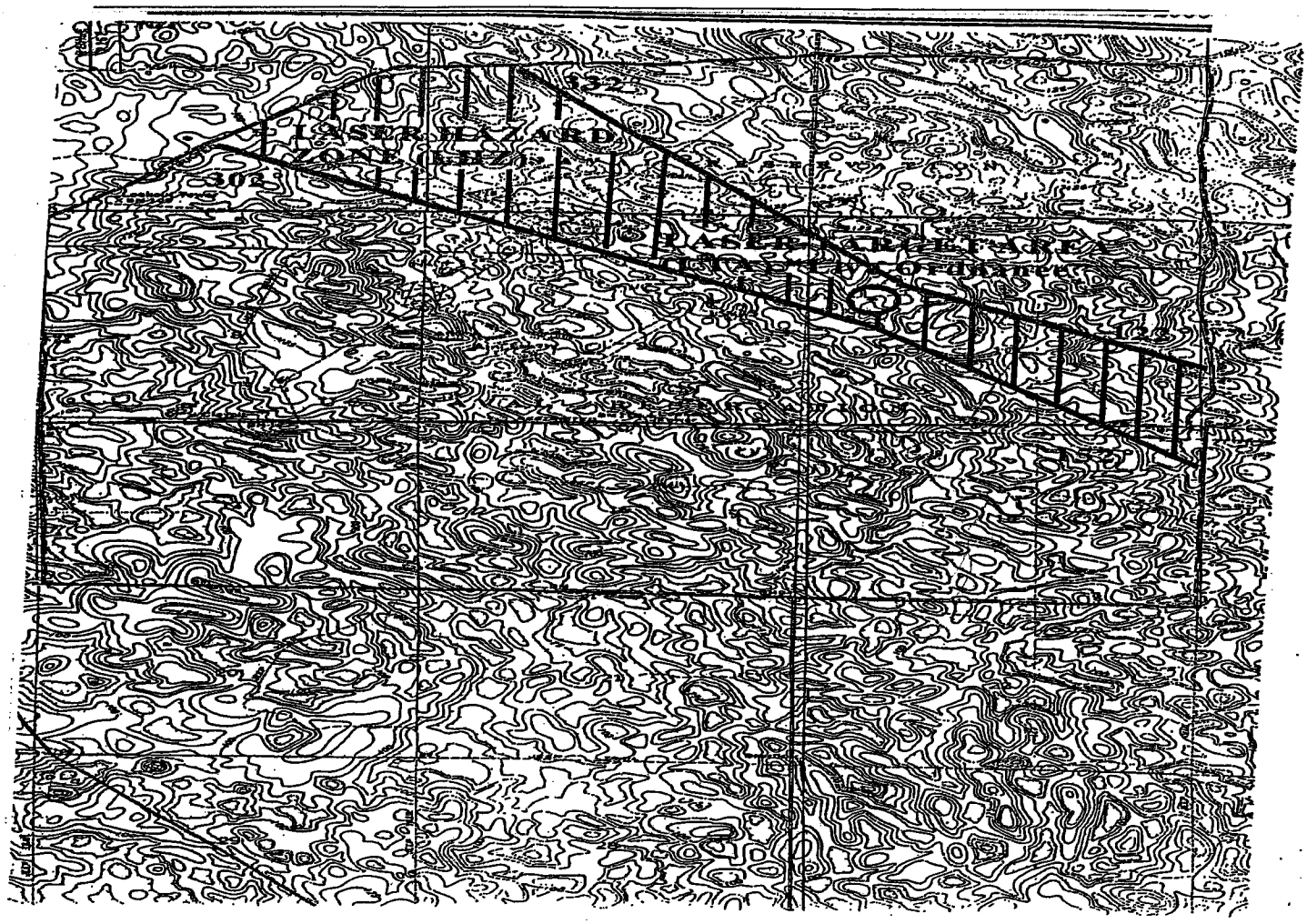
Page: A-4	1	**Figure A-4**	**Heading Availability: 122° clockwise to 152°, and 302° clockwise to 332° true north**
Scale: 1 grid = 1 km	**Grid North**	Laser Surface Hazard Zone LTA "Main Bull" from Aircraft	**Maximum Buffer Zone Angle: 5 mrad**

LASER SAFETY SURVEY REPORT
PINECASTLE AIRCREW COMBAT TRAINING RANGE (ACTR)



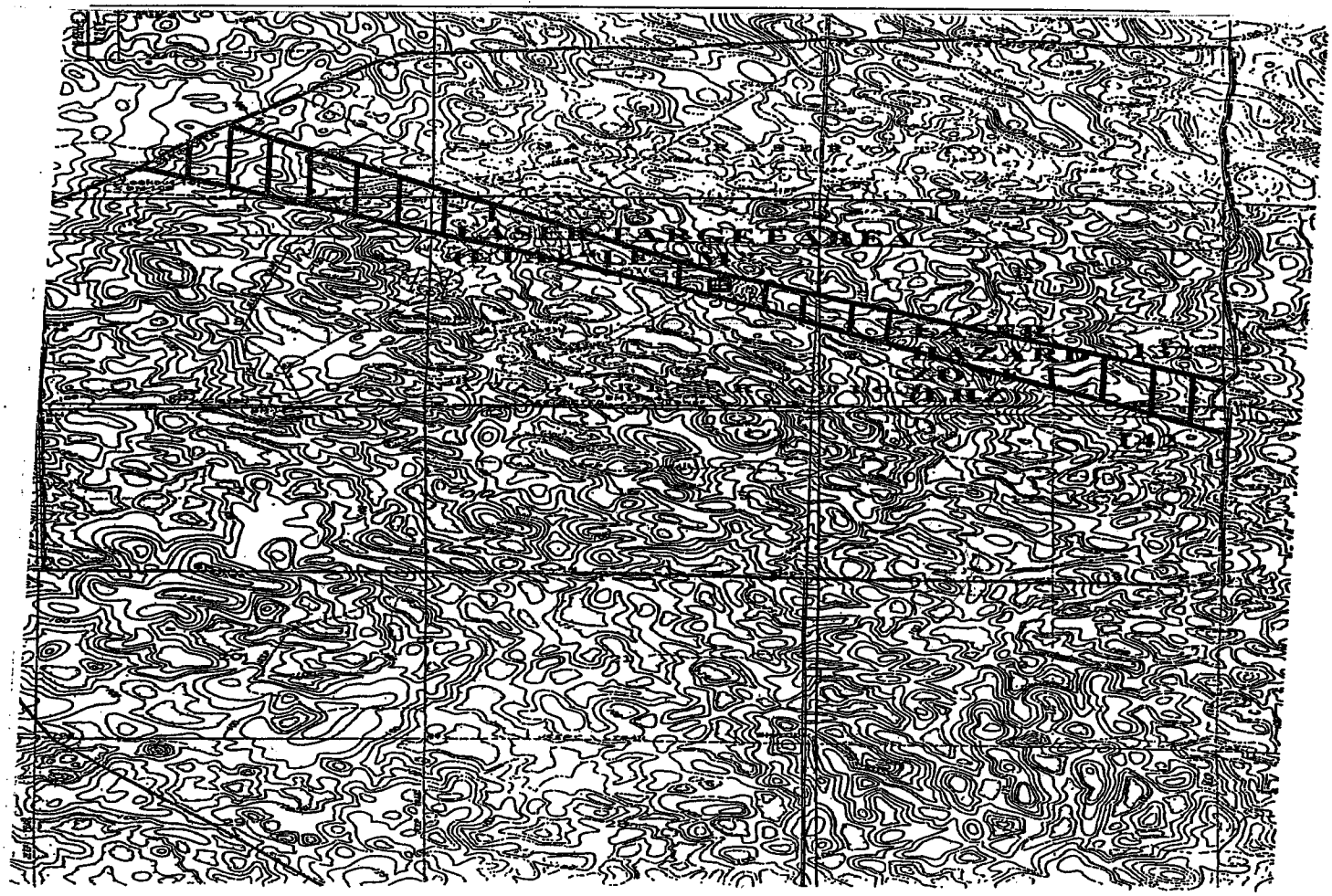
Page: A-5	1	**Figure A-5**	**Heading Availability: 122° clockwise to 152°, and 302° clockwise to 332° true north**
Scale: 1 grid = 1 km	**Grid North**	**Laser Surface Hazard Zone** LTA "Day/Night Conventioanl" from Aircraft	**Maximum Buffer Zone Angle: 5 mrad**

LASER SAFETY SURVEY REPORT
PINECASTLE AIRCREW COMBAT TRAINING RANGE (ACTR)



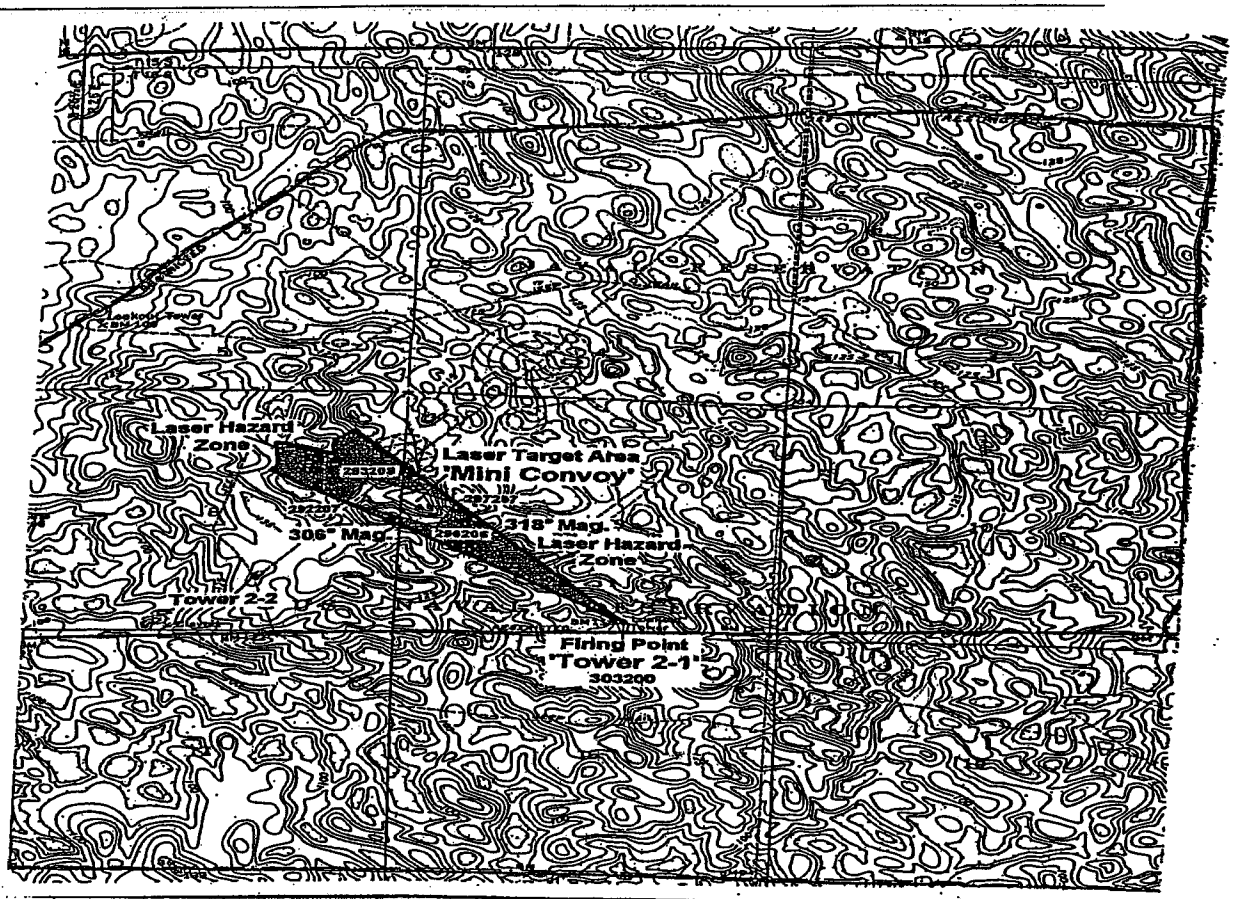
Page: A-6	1	**Figure A-6**	**Heading Availability: 122° clockwise to 152°, and 302° clockwise to 332° true north**
Scale: 1 grid = 1 km	Grid North	Laser Surface Hazard Zone LTA "Live Ordnance" from Aircraft	Maximum Buffer Zone Angle: 5 mrad

LASER SAFETY SURVEY REPORT
PINECASTLE AIRCREW COMBAT TRAINING RANGE (ACTR)



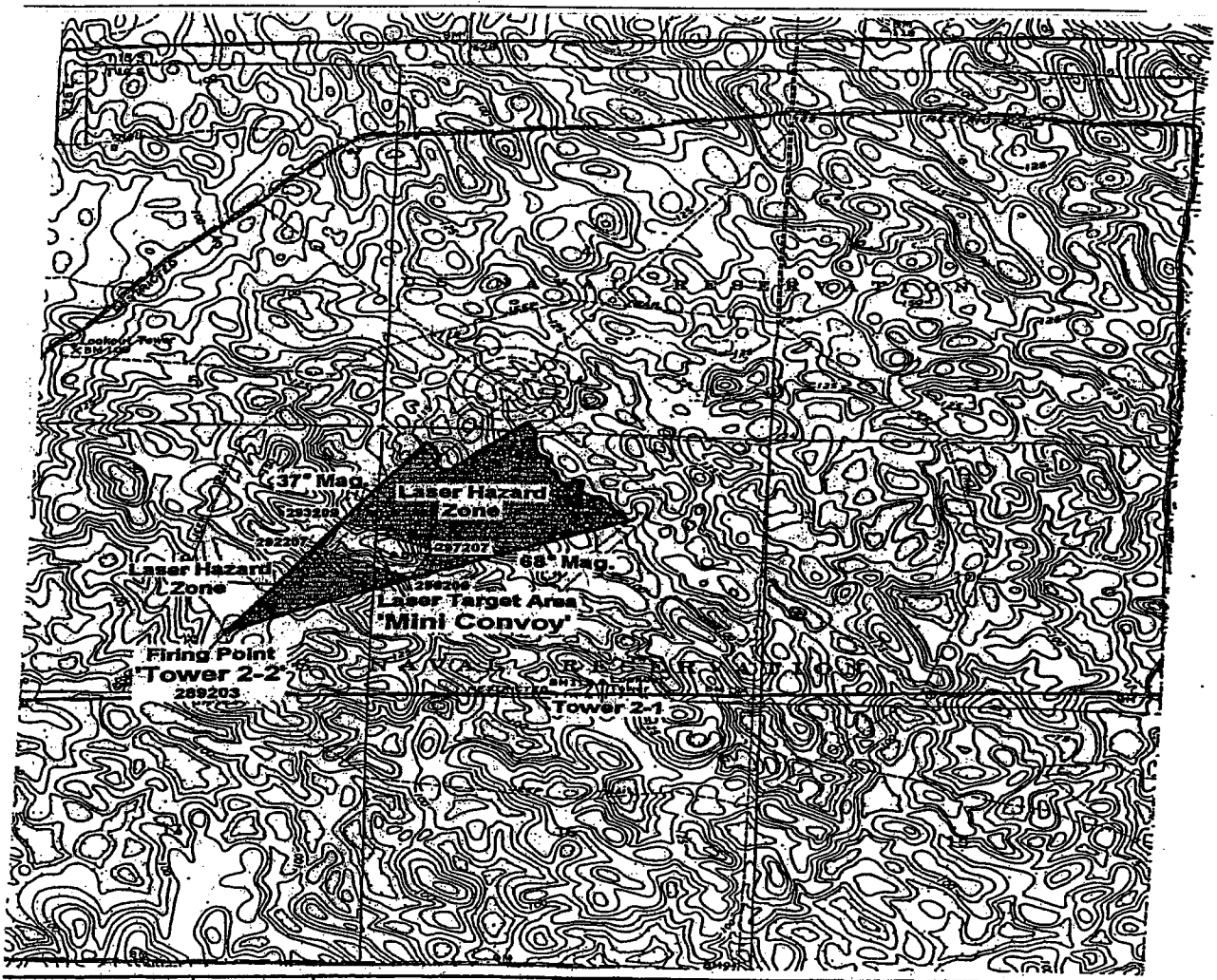
Page: A-7	1	**Figure A-7**	**Heading Availability: 132° clockwise to 142° true north**
Scale: 1 grid = 1 km	**Grid North**	**Laser Surface Hazard Zone** LTA "LES-M" from Aircraft	**Maximum Buffer Zone Angle: 5 mrad**

LASER SAFETY SURVEY REPORT
PINECASTLE AIRCREW COMBAT TRAINING RANGE (ACTR)



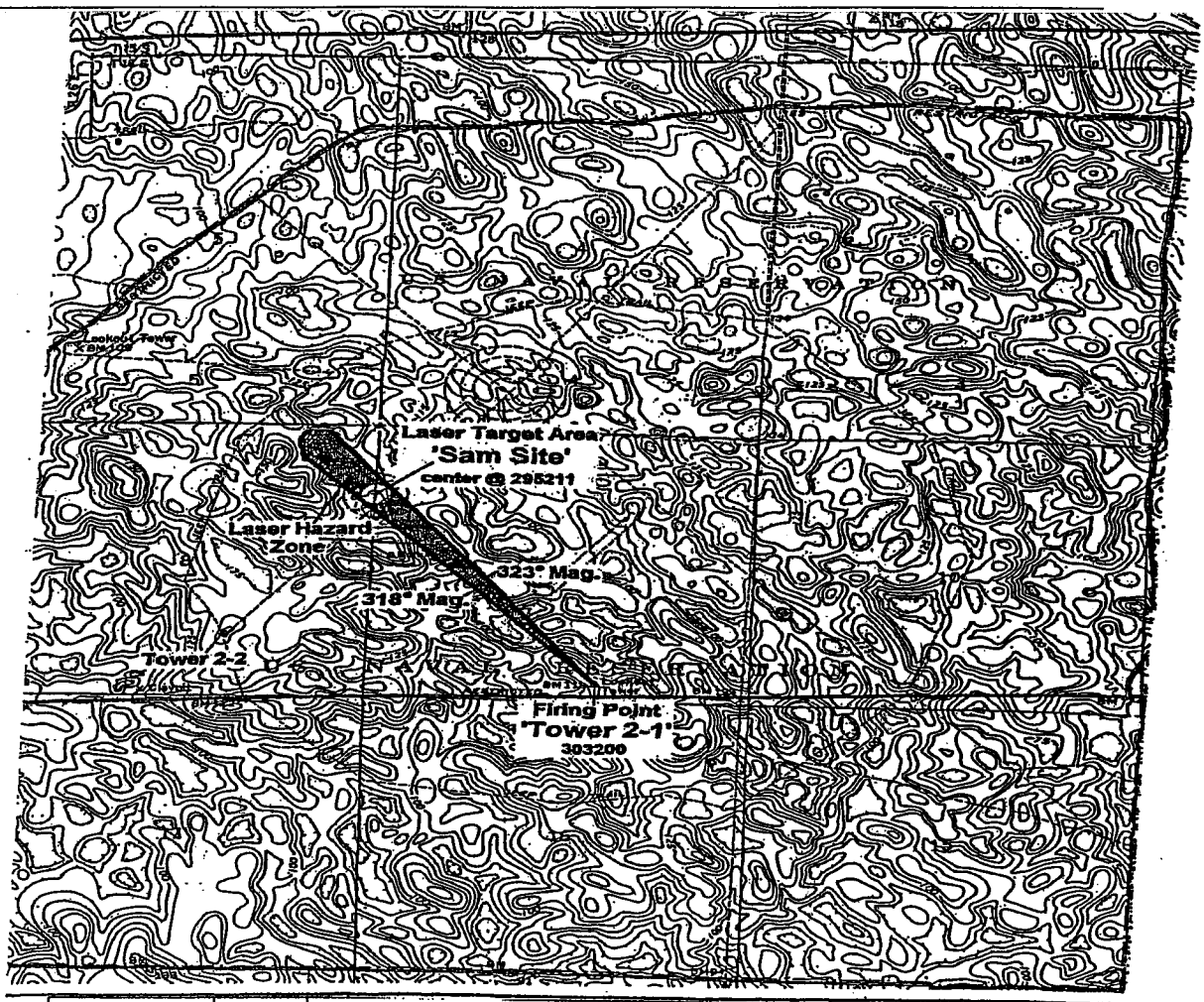
Page: C-1	1	Figure C-1	Lateral Firing Limits: 306 ° to 318° Clockwise True North Minimum Elevation: 160 feet MSL
Scale: 1 grid = 1 km	Grid North	Laser Surface Hazard Zone LTA: "Mini Convoy " from FP "Tower 2-1"	Maximum Buffer Zone Angle: 5 mrad

LASER SAFETY SURVEY REPORT
PINECASTLE AIRCREW COMBAT TRAINING RANGE (ACTR)



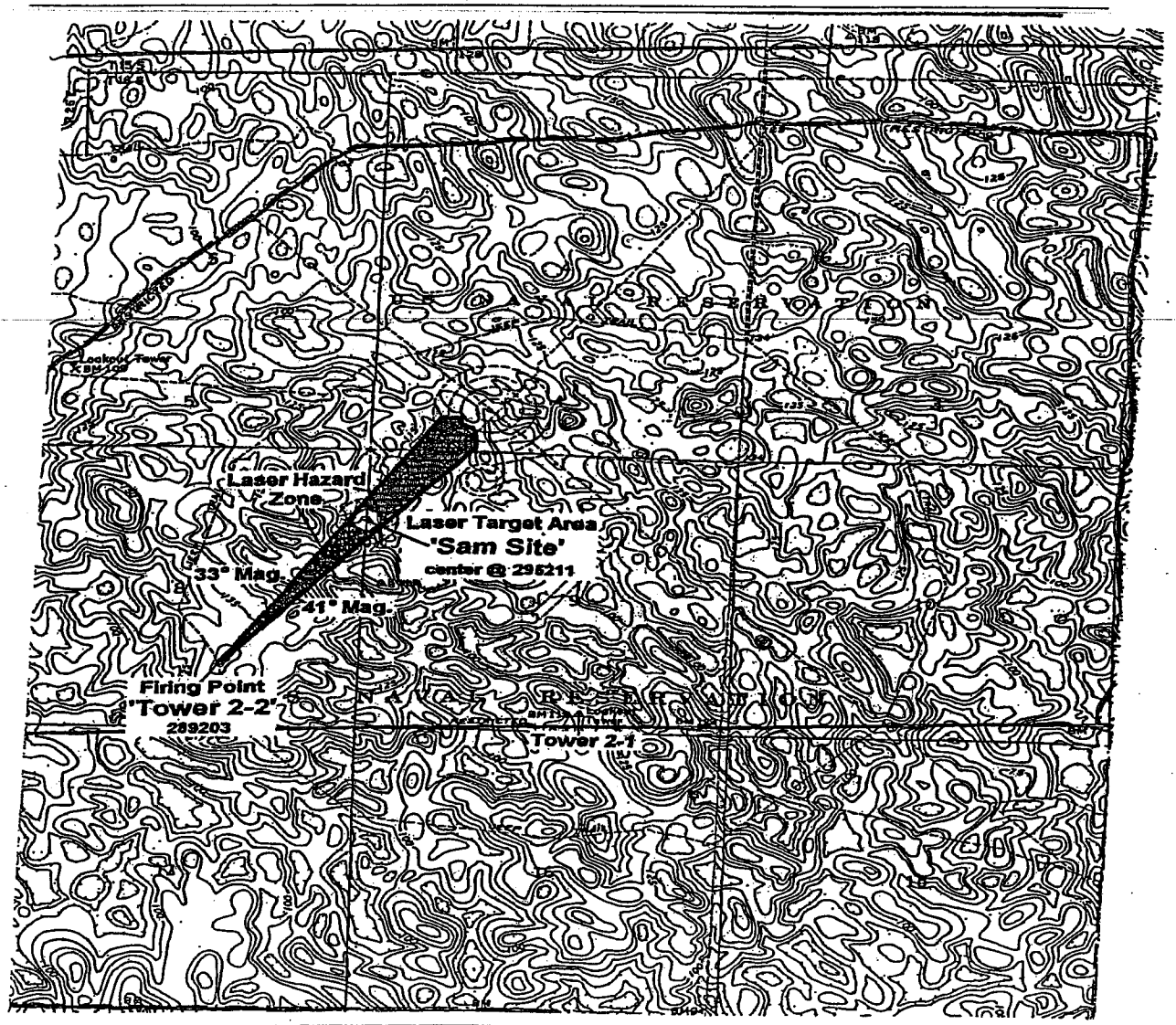
Page: C-2		**Figure C-2**	**Lateral Firing Limits: 037° to 068° Clockwise True North** **Minimum Elevation: 200 feet MSL**
Scale: 1 grid = 1 km	Grid North	Laser Surface Hazard Zone LTA "Mini Convoy" from FP "Tower 2-2"	Maximum Buffer Zone Angle: 10 mrad

LASER SAFETY SURVEY REPORT
PINECASTLE AIRCREW COMBAT TRAINING RANGE (ACTR)



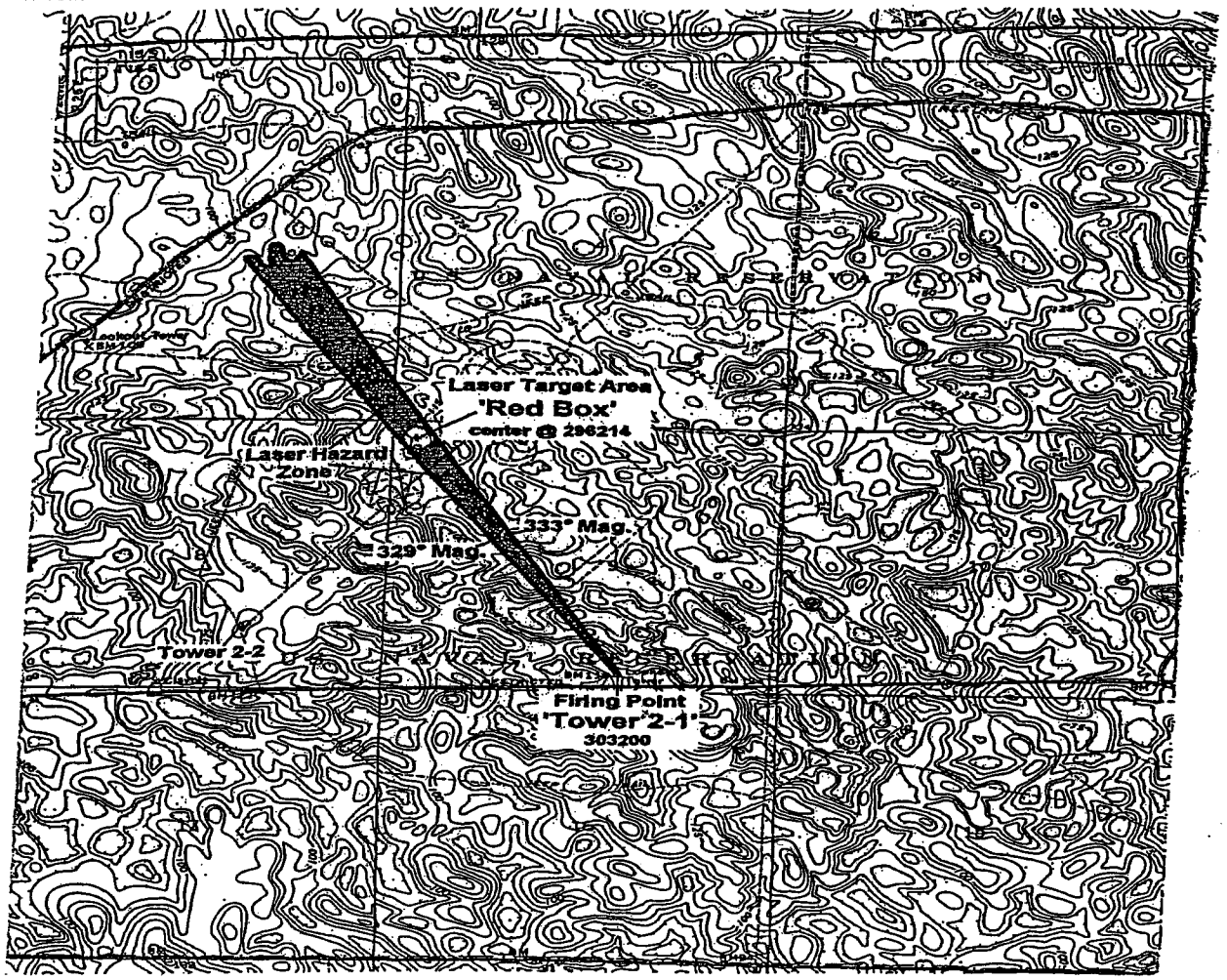
Page: C-3	1	Figure C-3	Lateral Firing Limits: 318 to 323° Clockwise True North Minimum Elevation: 160 feet MSL
Scale: 1 grid = 1 km	Grid North	Laser Surface Hazard Zone LTA: "Sam Site" from FP "Tower 2-1"	Maximum Buffer Zone Angle: 5 mrad

LASER SAFETY SURVEY REPORT
PINECASTLE AIRCREW COMBAT TRAINING RANGE (ACTR)



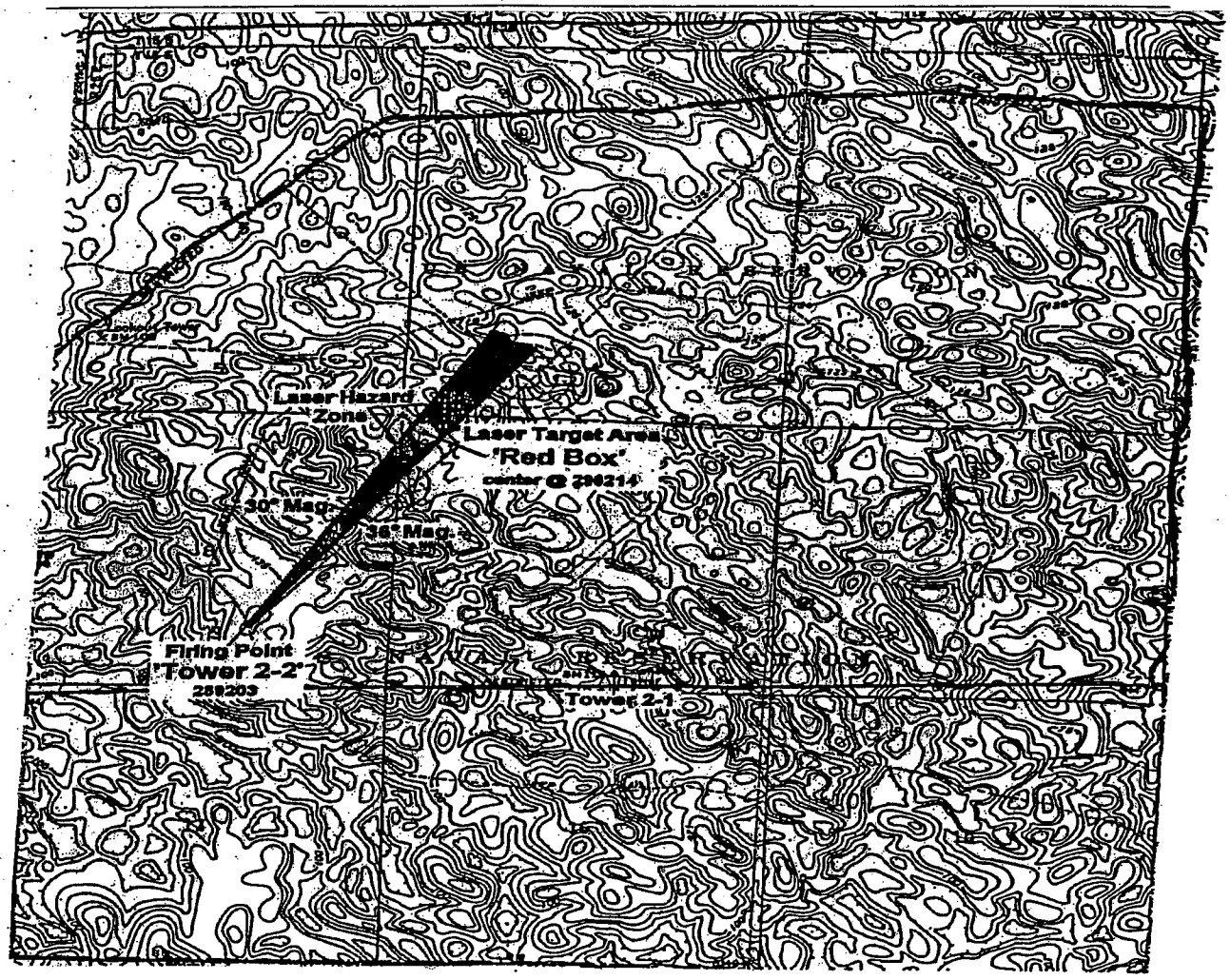
Page: C-4	1	**Figure C-4**	**Lateral Firing Limits: 033° to 041° Clockwise Magnetic True North** *Minimum Elevation: 200* **feet MSL**
Scale: 1 grid = 1 km	Grid North	Laser Surface Hazard Zone LTA "Sam Site" from FP "Tower 2-2"	Maximum Buffer Zone Angle: 10 mrad

LASER SAFETY SURVEY REPORT
PINECASTLE AIRCREW COMBAT TRAINING RANGE (ACTR)



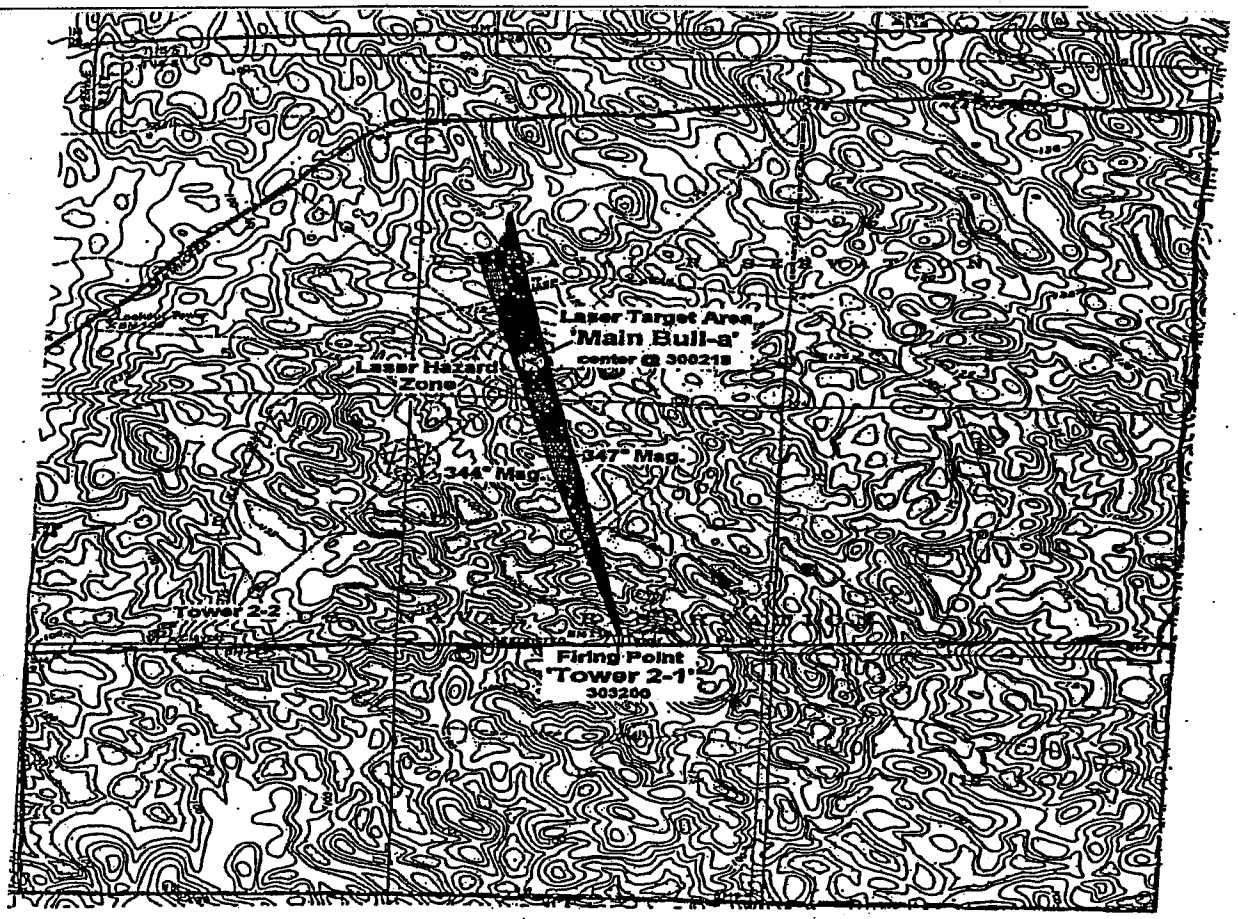
Page: C-5	1	**Figure C-5**	***Lateral Firing Limits:*** **329° to 333° Clockwise True North Minimum Lasing Elevation: 160 feet MSL**
Scale: 1 grid = 1 km	Grid North	Laser Surface Hazard Zone LTA "Red Box" from FP "Tower 2-1"	Maximum Buffer Zone Angle: 5 mrad

LASER SAFETY SURVEY REPORT
PINECASTLE AIRCREW COMBAT TRAINING RANGE (ACTR)



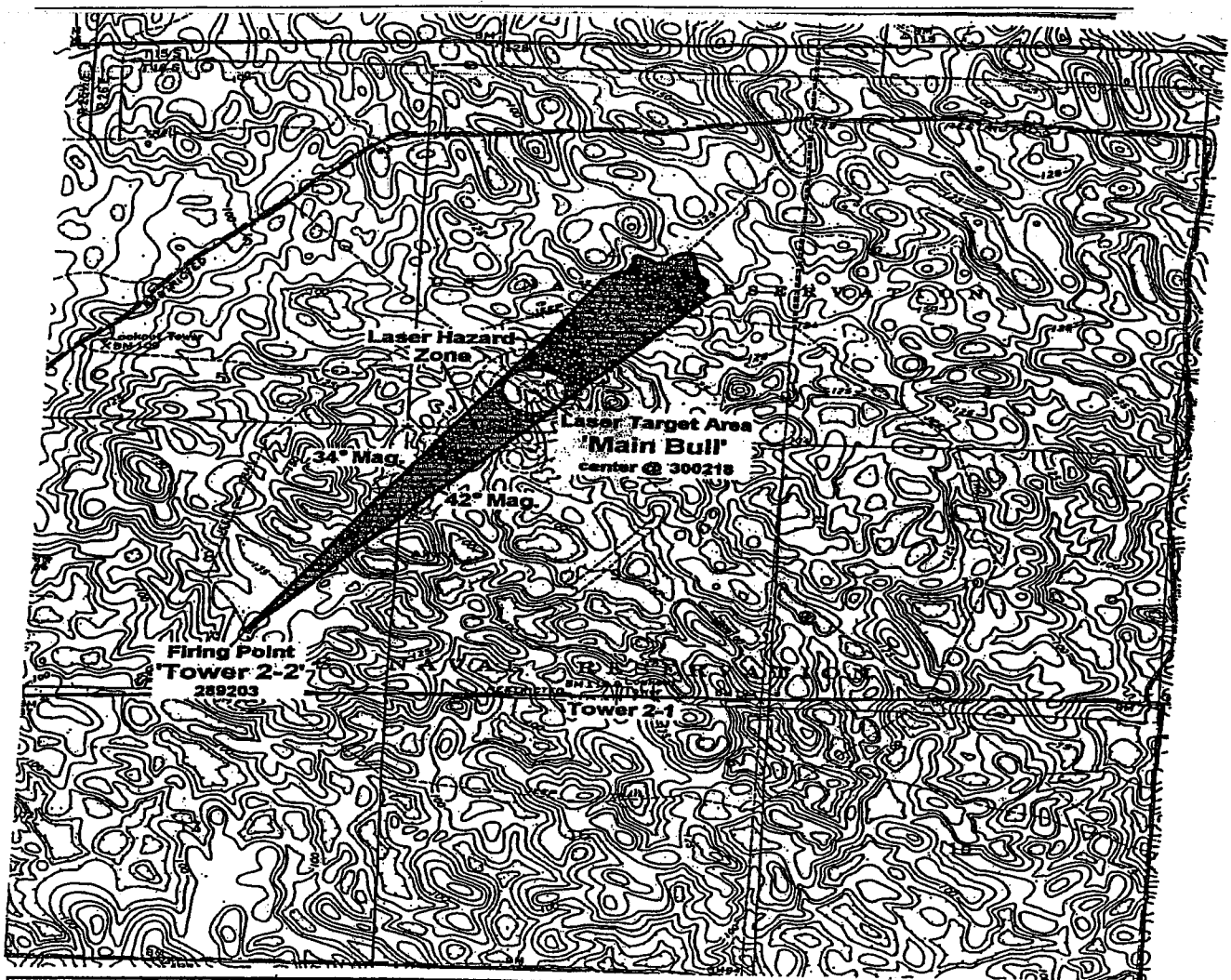
Page: C-6	1	**Figure C-6**	**Lateral Firing Limits: 030° to 036° Clockwise True North** **Minimum Lasing Elevation: 200 feet MSL**
Scale: 1 grid = 1 km	Grid North	Laser Surface Hazard Zone LTA "Red Box" from FP "Tower 2-2"	Maximum Buffer Zone Angle: 10 mrad

LASER SAFETY SURVEY REPORT
PINECASTLE AIRCREW COMBAT TRAINING RANGE (ACTR)



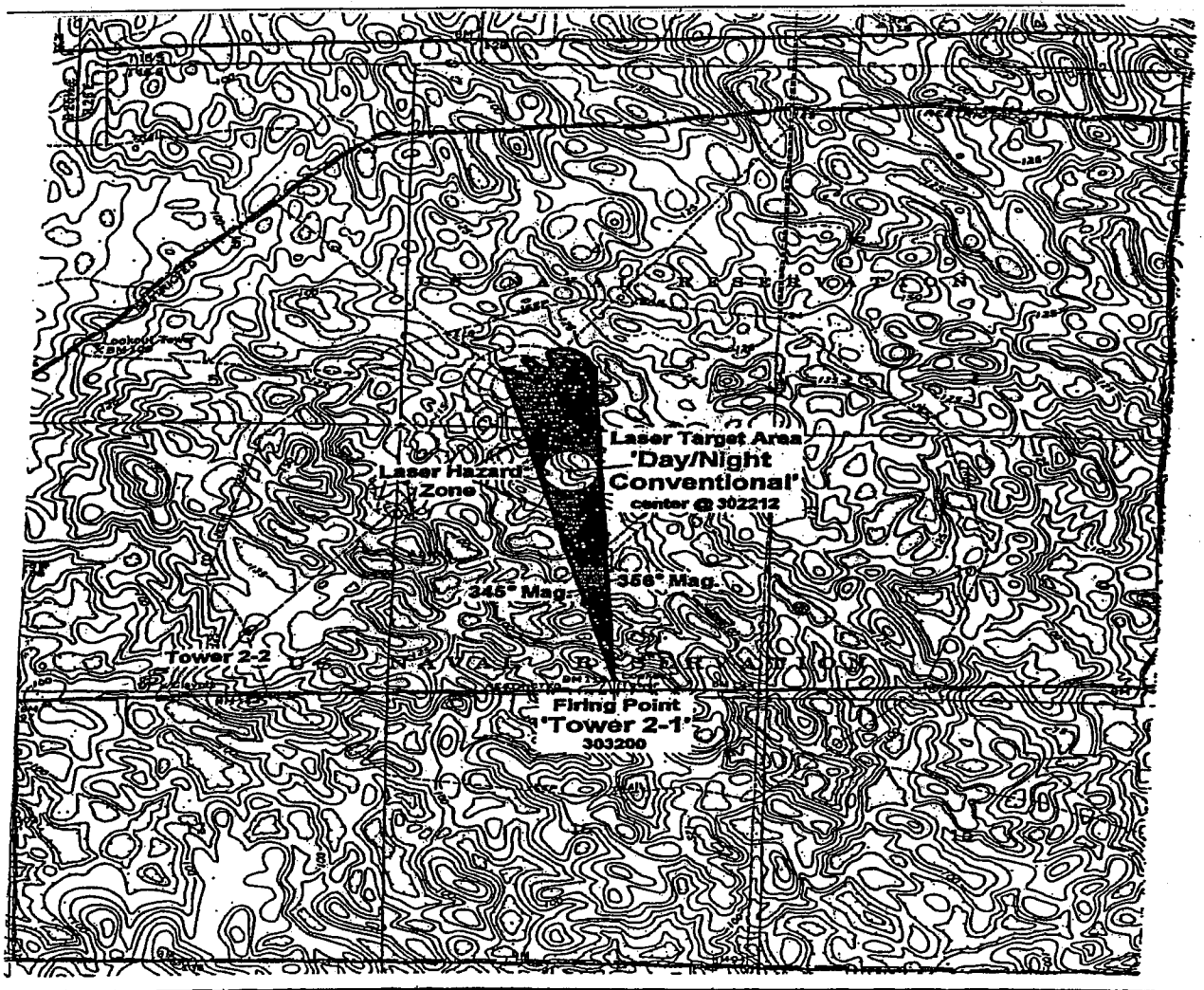
Page: C-7	1	Figure C-7	Lateral Firing Limits: to 347° Clockwise True North Minimum Lasing Elevation: 160 feet MSL
Scale: 1 grid = 1 km	Grid North	Laser Surface Hazard Zone LTA: "Main Bull" from FP "Tower 2-1"	Maximum Buffer Zone Angle: 5mrad

LASER SAFETY SURVEY REPORT
PINECASTLE AIRCREW COMBAT TRAINING RANGE (ACTR)



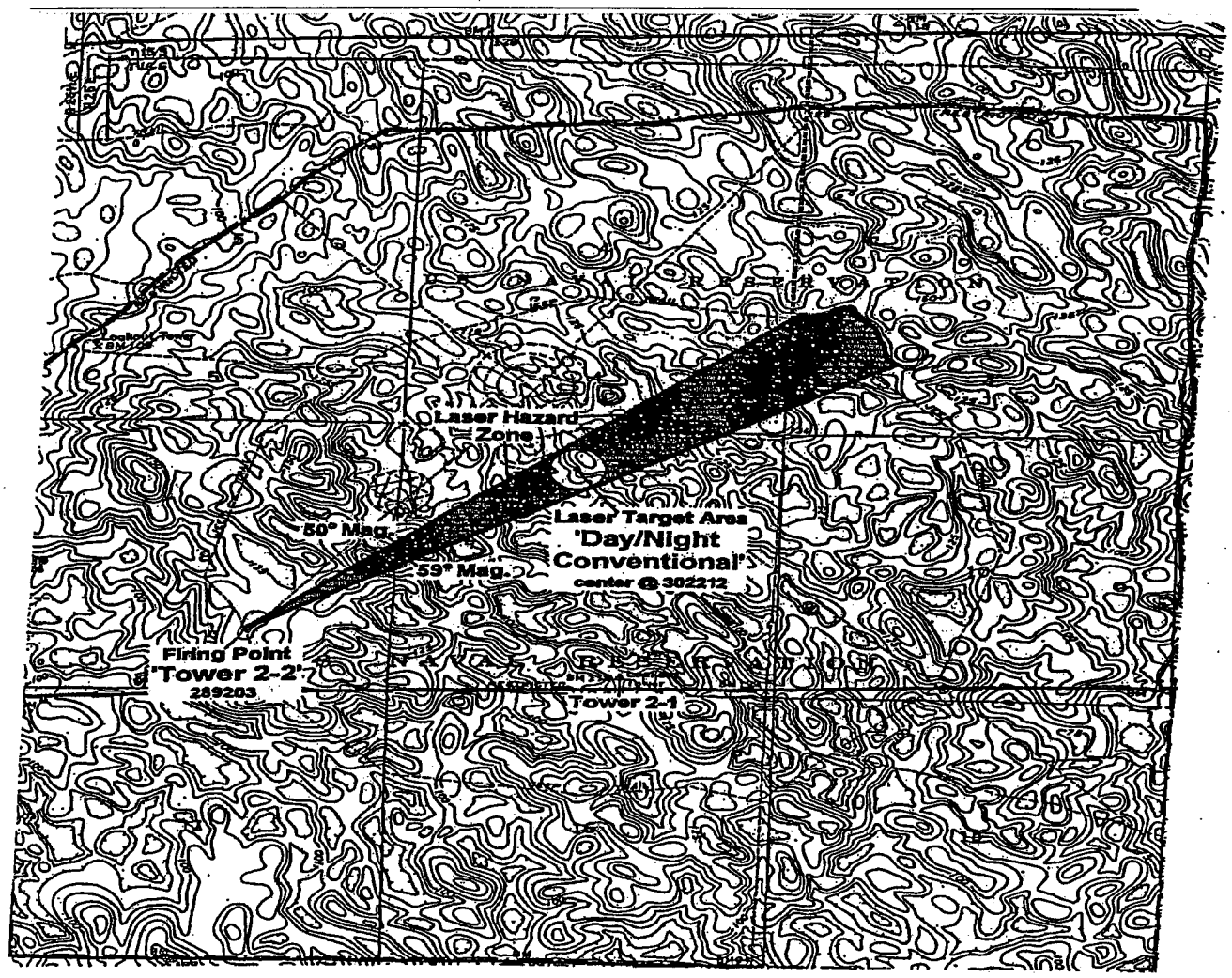
Page: C-8	1	**Figure C-8**	**Lateral Firing Limits: 034° to 042° Clockwise True North Minimum Lasing Elevation: 200 feet MSL**
Scale: 1 grid = 1 km	**Grid North**	**Laser Surface Hazard Zone LTA "Main Bull" from FP "Tower 2-2"**	**Maximum Buffer Zone Angle: 5 mrad**

LASER SAFETY SURVEY REPORT
PINECASTLE AIRCREW COMBAT TRAINING RANGE (ACTR)



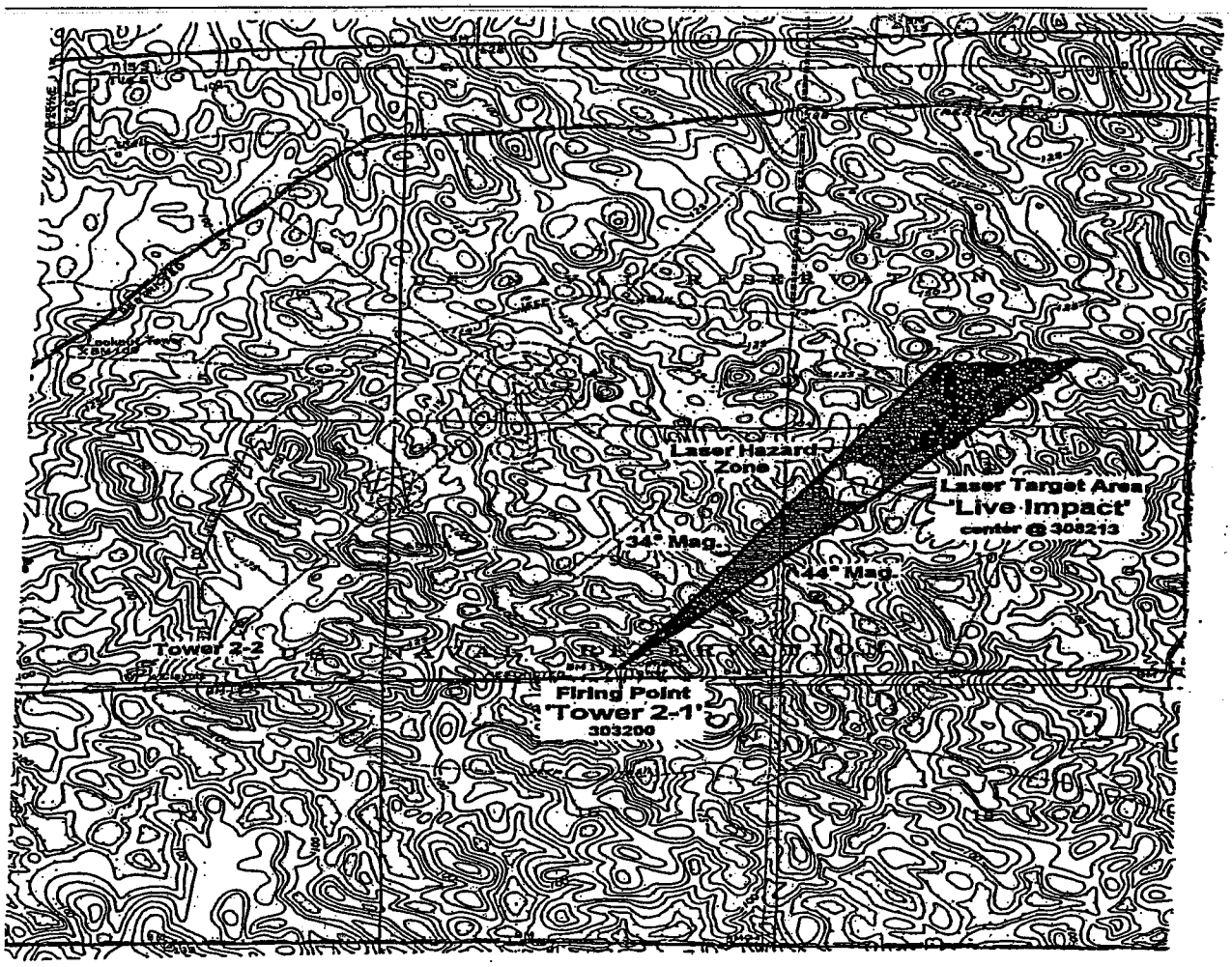
Page: C-9	1	**Figure C-9**	**Lateral Firing Limits: 345° to 356° Clockwise True North** **Minimum Lasing Elevation: 160 feet MSL**
Scale: 1 grid = 1 km	Grid North	Laser Surface Hazard Zone LTA "Day/Night Conventional" from FP "Tower 2-1"	Maximum Buffer Zone Angle: 5 mrad

LASER SAFETY SURVEY REPORT
PINECASTLE AIRCREW COMBAT TRAINING RANGE (ACTR)



Page: C-10	1	**Figure C-10**	**Lateral Firing Limits: 050° to 059° Clockwise True North** **Minimum Lasing Elevation: 200 feet MSL**
Scale: 1 grid = 1 km	**Grid North**	**Laser Surface Hazard Zone** **LTA "Day/Night Conventional" from FP "Tower 2-2"**	**Maximum Buffer Zone Angle: 10 mrad**

LASER SAFETY SURVEY REPORT
PINECASTLE AIRCREW COMBAT TRAINING RANGE (ACTR)



Page: C-11	1	**Figure C-11**	**Lateral Firing Limits: 034° to 044° Clockwise True *North* Minimum Lasing Elevation: 160 feet MSL**
Scale: 1 grid = 1 km	**Grid North**	***Laser Surface Hazard Zone* LTA "Live Ordnance" from FP "Tower 2-1"**	***Maximum Buffer Zone* Angle: 5 mrad**

LASER SAFETY SURVEY REPORT
PINECASTLE AIRCREW COMBAT TRAINING RANGE (ACTR)

LASER WEAPON SYSTEM	BUFFER (MRAD)	WAVE LENGTH (nm)	NOMINAL OCULAR HAZARD DISTANCE			OPTICAL DENSITY	
			OPTICS (km)			OPTICS	
			EYE	8 cm	12 cm	UNAID	AID
TADS/PNVS (AAH-TADS)[a]	5	1,064	26	68		4.0	5.5
LAAT (AH-1S)[a]	5	1,064	5	15	30	3.5	4.8
MMS (OH-58D)[a]	5	1,064	35			4.1	5.3
AN/AVQ-25 (F-111F PAVE TACK)[a]	5	1,064	16	52	70	4.3	5.8
AN/AAS-33A (A-6E TRAM)[a]	5	1,064	14.6	58	58	4.6	5.8
AN/AAS-37 (0V-10D NOS)[a]	5	1,064	11.2	56	59	5.2	5.6
AN/AAS-38A (F/A-18 LTDR)[a,1]	5	1,064	17	63	73	4.3	5.4
LANTIRN LTDR[a,2]	5	1,064	22.7			4.15	
NITE EAGLE LTDR[b] (multi pulse to ground)	5	1,064	15	54.9	64.6	4.1	5.2
AN/ASQ-153 (F-4E PAVE SPIKE)[a]	5	1,064	10	48	58	4.2	5.6
LANTIRN RANGEFINDER[a,2,3]	5	1,540					
CLD[a] handheld	10	1,064	9.7	48	58	4.5	5.4
LLTD[a] handheld	10	1,064	7	38		4.0	4.9
AN/GVS-5[a] handheld	10	1,064	2.7	21	27	3.7	4.4

LASER SAFETY SURVEY REPORT
PINECASTLE AIRCREW COMBAT TRAINING RANGE (ACTR)

LASER WEAPON SYSTEM	BUFFER (MRAD)	WAVE LENGTH (nm)	NOMINAL OCULAR HAZARD DISTANCE			OPTICAL DENSITY	
			OPTICS (km)			OPTICS	
			EYE	8 cm	12 cm	UNAID	AID
AN/PAQ-1 (LTD)[a] handheld	10	1,064	7	15	33	4.2	5.8
AN/GAQ-T1 (LDSS)[b] tripod (no lens)	5	1064	12.7	54.4	62.5	4.4	5.4
AN/GAQ-T1 (LDSS)[b,4] tripod (2x lens)	5	1064	4	19.3	33.2	5	5.4
AN/GAQ-T1 (LDSS)[b,4] tripod (5x lens)	5	1064	1.7	9.8	19	5.4	5.4
AN/GAQ-T1 (LDSS)[b,4] tripod (10x len)	5	1064	.9	5.5	11.5	5.4	5.4
AN/TVQ-2 (GVLLD)[a] tripod	2	1,064	25	80	87	3.8	5.5
AN/PAQ-3 (MULE)[a] tripod	2	1,064	20	64	78	3.9	5.6
AN/PAQ-3 (MULE)[a] tripod night	5	1,064	20	64	78	3.9	5.6
AN/PAQ-3 (MULE)[a] handheld	10	1,064	20	64	78	3.9	5.6
AN/PAQ-3 (MULE)[a] handheld night	15	1,064	20	64	78	3.9	5.6
SOFLAM[b] (10 sec exp)	5	1,064	9.6	45	54	4.0	5.3
F-117	5	1,064	18.5	45	56	4.5	6.0

LASER SAFETY SURVEY REPORT
PINECASTLE AIRCREW COMBAT TRAINING RANGE (ACTR)

LASER WEAPON SYSTEM	BUFFER (MRAD)	WAVE LENGTH (nm)	NOMINAL OCULAR HAZARD DISTANCE			OPTICAL DENSITY	
			OPTICS (km)			OPTICS	
			EYE	8 cm	12 cm	UNAID	AID
AN/ASQ-211 NTS LDRS (AH-1W)	5	1,064	15	48	59	3.5	5.2
AN/GVS-5 (19 db red filter)	10	1,064	0.29	1.8	1.8	3.7	4.4
AN/GVS-5 (29 db yellow filter)	10	1,064	0.05	0.55	0.55	3.7	3.7
AN/PEQ-2 (ITPAIL) aim mode, low pw	0	830	0	0	0	0	0
AN/PEQ-2 (ITPAIL) dual, low mode	10	830	0.078	0.615	0.88	2.2	2.2
AN/PEQ-2 (ITPAIL) dual, high mode	10	830	0.263	1.81	2.8	2.2	2.2
AN/PEQ-2 (TPAIL) aim or illum low	0	830	0	0	0	0	0
AN/PEQ-2 (TPAIL) dual, low mode	10	830	0.025	0.16	-	0	0
AN/PEQ-2 (TPAIL) dual, high mode	10	830	0.22	1.3	-	2.0	2.0
AN/PVS-X (MLRF)	1600**	1,064	3	16	29	3.7	3.7
AN/PVS-6 (MELIOS)	10	1,540	0	0.018	0.037	0	0.5

LASER SAFETY SURVEY REPORT
PINECASTLE AIRCREW COMBAT TRAINING RANGE (ACTR)

LASER WEAPON SYSTEM	BUFFER (MRAD)	WAVE LENGTH (nm)	NOMINAL OCULAR HAZARD DISTANCE			OPTICAL DENSITY	
			OPTICS (km)			OPTICS	
			EYE	8 cm	12 cm	UNAID	AID
IZLID 2	10	870	0.248	1.63	2.55	3.0	3.0
AN/AAS-44 LAMPS	5	1064	22.36	72.67	87.59	4.5	5.6
MPLI & HPLI	10	830-835	280	2900	4800	3.2	3.2
AN/VVG-3 (M1)	5	1064	7	35	44	4.7	4.7
AN/VVG-3 (LAV-105)	5	1064	8.2	41	50	4.7	4.7
AIM-1/DLR	10	830	0.236	1.56	2.43	1.7	1.7
LPL-30	10	800-850	0.085	0.68	1.1	1.7	1.7

SOURCES FOR DATA IN TABLE

A MIL-HDBK-828 OF 15 APRIL 1993
B LSRB MINUTES OF 1992
C LSRB MINUTES OF 1993
D LSRB MINUTES OF 1997

NOTES

1 LIMITED USE AS REQUIRED BY OPERATIONAL NECESSITY SEE LSRB MINUTES SER 223-2/007 OF 25 JANUARY 1993

2 THIS SYSTEM WAS TESTED BY BROOKS AIRFORCE BASE WHICH USES 2MRAD AS THEIR BUFFER ZONE. HOWEVER THE NAVY IS RESTRICTING THE BUFFER ZONE TO 5 MRAD.

3 THE AIRFORCE CONSIDERS THE OPERATIONAL PARAMETERS OF THE RANGEFINDER MODE TO BE OPERATIONALLY EYESAFE DUE TO THE WEAK PULSE AND TIME BETWEEN PULSES.

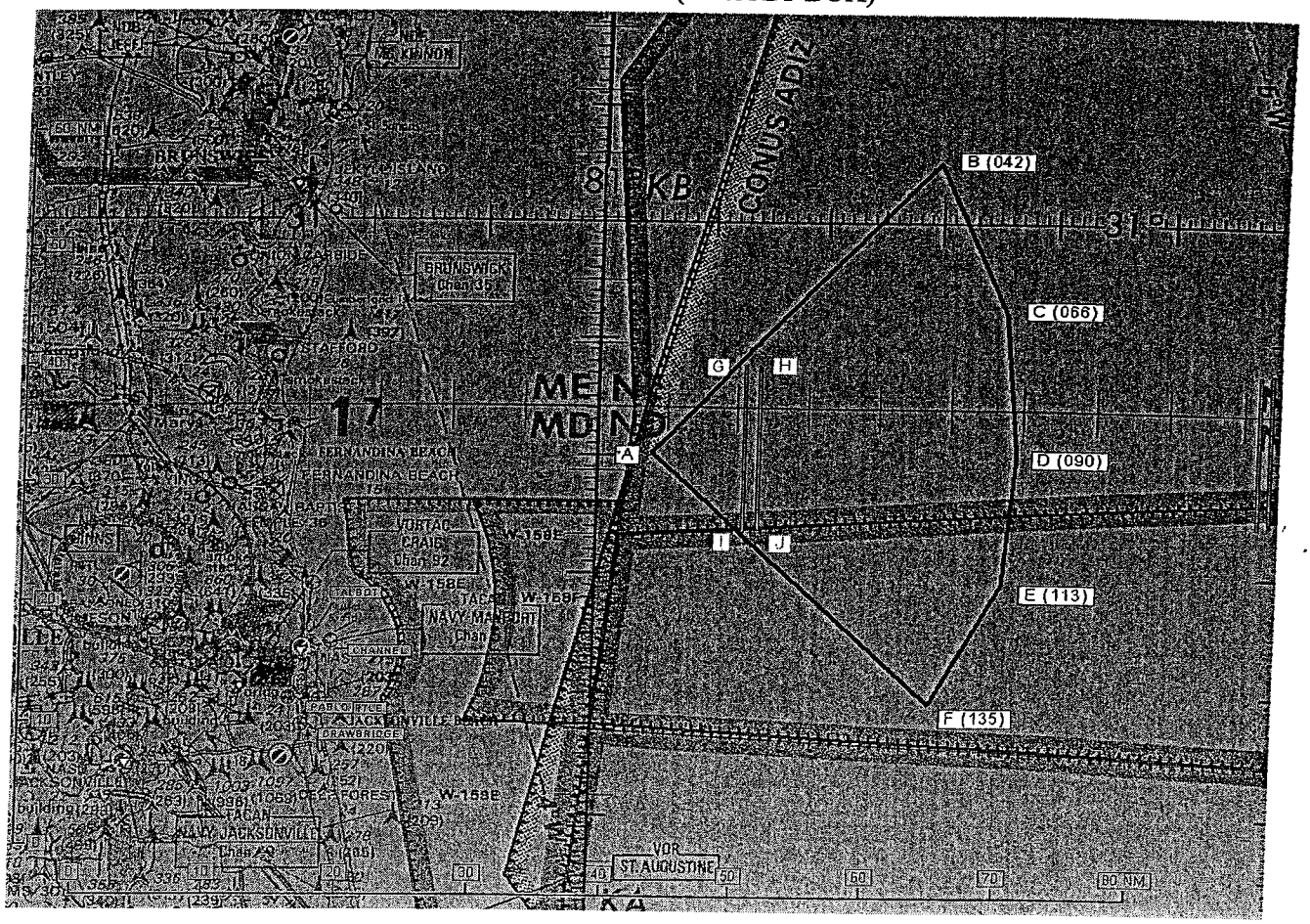
4 THERE IS A SKIN HAZARD DISTANCE AND A DIFFUSE REFLECTOR DISTANCE. SEE LSRB MINUTES SER 223-2/191 OF 16 JANUARY 1992

** 90 DEGREE BUFFER ZONE REQUIRED FOR RCA VERSION AN/PVS-X WITH SECONDARY BEAM; 10 DEGREES FOR BRUNSWICK VERSION.

LASER TRAINING RANGE
NON-RIGHT WHALE SEASON

The following coordinates apply to the points depicted for the Laser Training Range diagram for Non-Right Whale Season (01 April to 31 November):

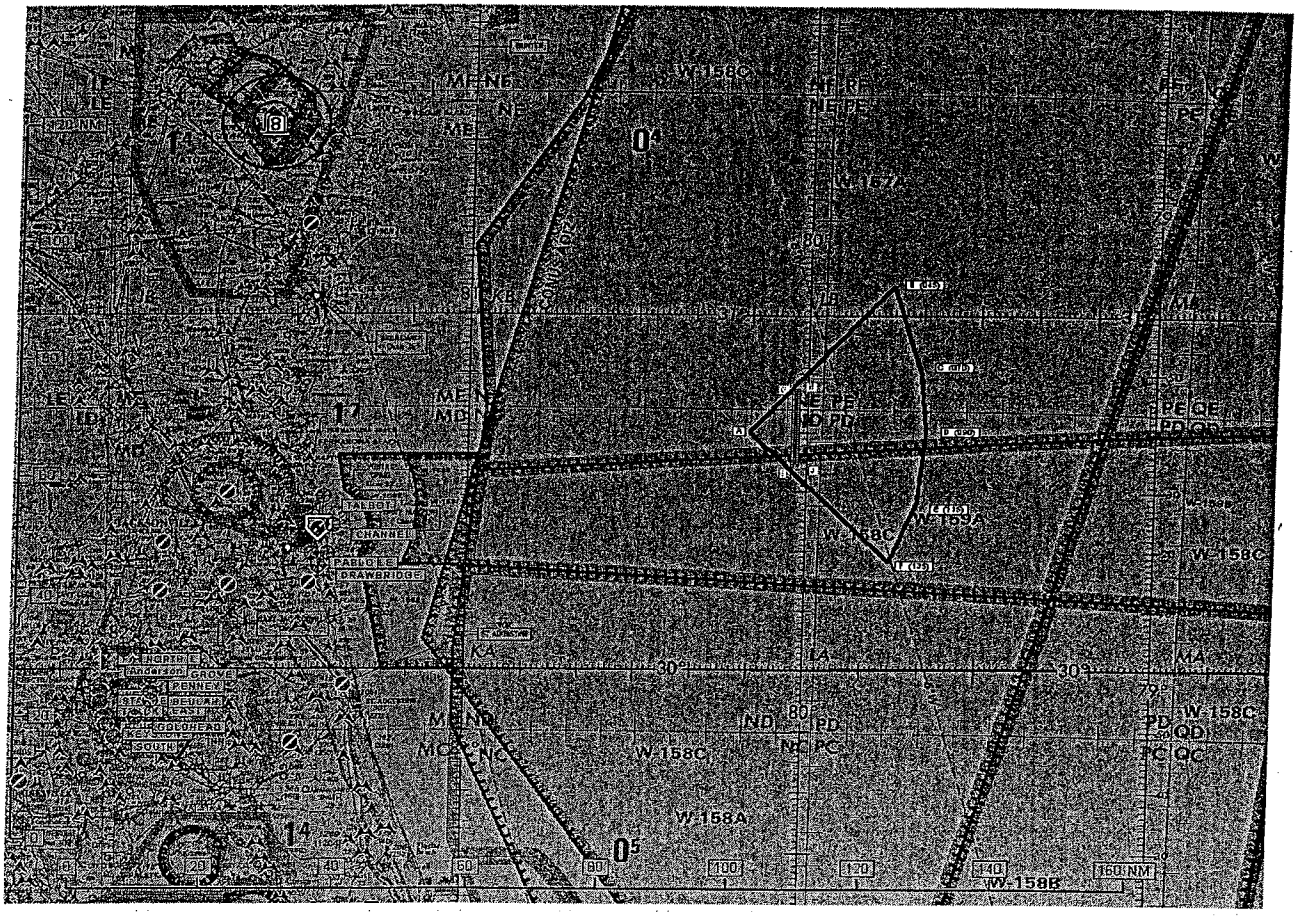
PT	LAT/LONG		FIRING BRG FROM PT A (IN DEGREES TRUE)
A.	30 40 00N	080 55 00W	N/A
B.	31 05 00N	080 30 00W	042
C.	30 52 00N	080 24 00W	066
D.	30 40 00N	080 23 00W	090
E.	30 29 00N	080 24 00W	113
F.	30 19 00N	080 30 00W	135
G.	30 47 30N	080 46 30W	N/A (TARGET BOX)
H.	30 47 30N	080 45 30W	N/A (TARGET BOX)
I.	30 33 30N	080 46 30W	N/A (TARGET BOX)
J.	30 33 30N	080 45 30W	N/A (TARGET BOX)



LASER TRAINING RANGE
RIGHT WHALE SEASON

The following coordinates apply to the points depicted for the Laser Training Range diagram for Right Whale Season (01 December to 31 March):

PT	LAT/LONG		FIRING BRG FROM PT A (IN DEGREES TRUE)
A.	30 40 00N	080 10 00W	N/A
B.	31 05 00N	079 45 00W	045
C.	30 50 00N	079 40 00W	070
D.	30 40 00N	079 39 00W	090
E.	30 28 00N	079 40 30W	115
F.	30 18 00N	079 45 00W	135
G.	30 47 00N	080 02 00W	N/A (TARGET BOX)
H.	30 47 00N	080 01 00W	N/A (TARGET BOX)
I.	30 34 00N	080 02 00W	N/A (TARGET BOX)
J.	30 34 00N	080 01 00W	N/A (TARGET BOX)



LASER FIRING LOG
(Sample Page)

the ordnance and the availability, accuracy, reliability and completeness of radar coverage. When surveillance of the range is conducted partially or solely by radar, surface and/or airborne, commanders shall ensure that the radar is operated and monitored by well-trained and competent personnel. Regardless of what area surveillance method is used, there must be assurance that the RANGE IS CLEAR. Surface or air firing exercises shall be suspended at any time visual or radar warning indicates the presence of any vessel or aircraft within firing range.

c. Firing with Cloud Cover. No ordnance shall be expended through an overcast or over an undercast, or when there is more than 0.3 cloud coverage in the area, unless the criteria established in paragraph 432 of FXP 2 are met.

d. Weather minimums. The ceiling and visibility minimums required for dropping ordnance in R-2906 (Rodman), R-2907 (Lake George), and R-2910 (Pinecastle) are 1000 feet ceiling and 3 miles visibility within a five (5) mile circle of the target. Flight leaders are ultimately responsible for ceiling and visibility determinations and the safe conduct of all ordnance deliveries.

e. Firing Areas. Firing exercises are permitted only within the areas in W-133/W-134, W-157 and W-158 and land targets as previously scheduled by FACSFACJAX. Exercises must be conducted in such a manner as to ensure that units and fall of shot are within the area/target assigned.

1003. Additional Safety Precautions for Firing Exercises by Surface Units

a. General

(1) Responsibility. The Commanding Officer of each ship or unit is responsible for compliance with these safety precautions and range regulations.

(2) Lookouts. A sufficient number of qualified lookouts must be posted during all firing exercises.

(3) Observers. A fully qualified check sight safety observer must be stationed at each firing turret or mount.

CHAPTER TWELVE

SPECIAL USE AIRSPACE REPORT

1201. General

a. Purpose. To establish procedures for recording and reporting usage data for the Restricted, Warning, Military Operating Areas (MOAs) and Military Training Routes (MTRs), which are scheduled and administered by FACSFACJAX.

b. Reference (b) requires that controlling authorities for training area/ranges and targets submit monthly reports documenting their usage. This data is required by CINCLANTFLT for developing and justifying, on a continuing basis, the five (5)-year development plan for training range instrumentation resources.

c. Reference (e) requires that all commands exercising controlling authority over Special Use Airspace (SUA) such as Restricted, Warning, MOAs and MTRs, submit quarterly reports documenting their usage. This data is required by the Chief of Naval Operations to justify the retention of such areas to the FAA, which is charged with the control and management of all United States airspace. In many cases desirable airspace is under the control of the military in the form of Warning, Restricted, or MOAs and MTRs. The retention of these areas has become a matter of paramount importance to military personnel of all services. It is imperative that detailed, comprehensive usage data be maintained to document the tempo of training operations in these areas.

1202. Action Required

a. Activities and reporting responsibilities are as follows:

ACTIVITY	AREA	REPORT REQUIRED
Director, Det Astor, FL and FACSFACJAX	Rodman Target Lake George Target Pinecastle Impact Target	Range Utilization Quarterly Summary

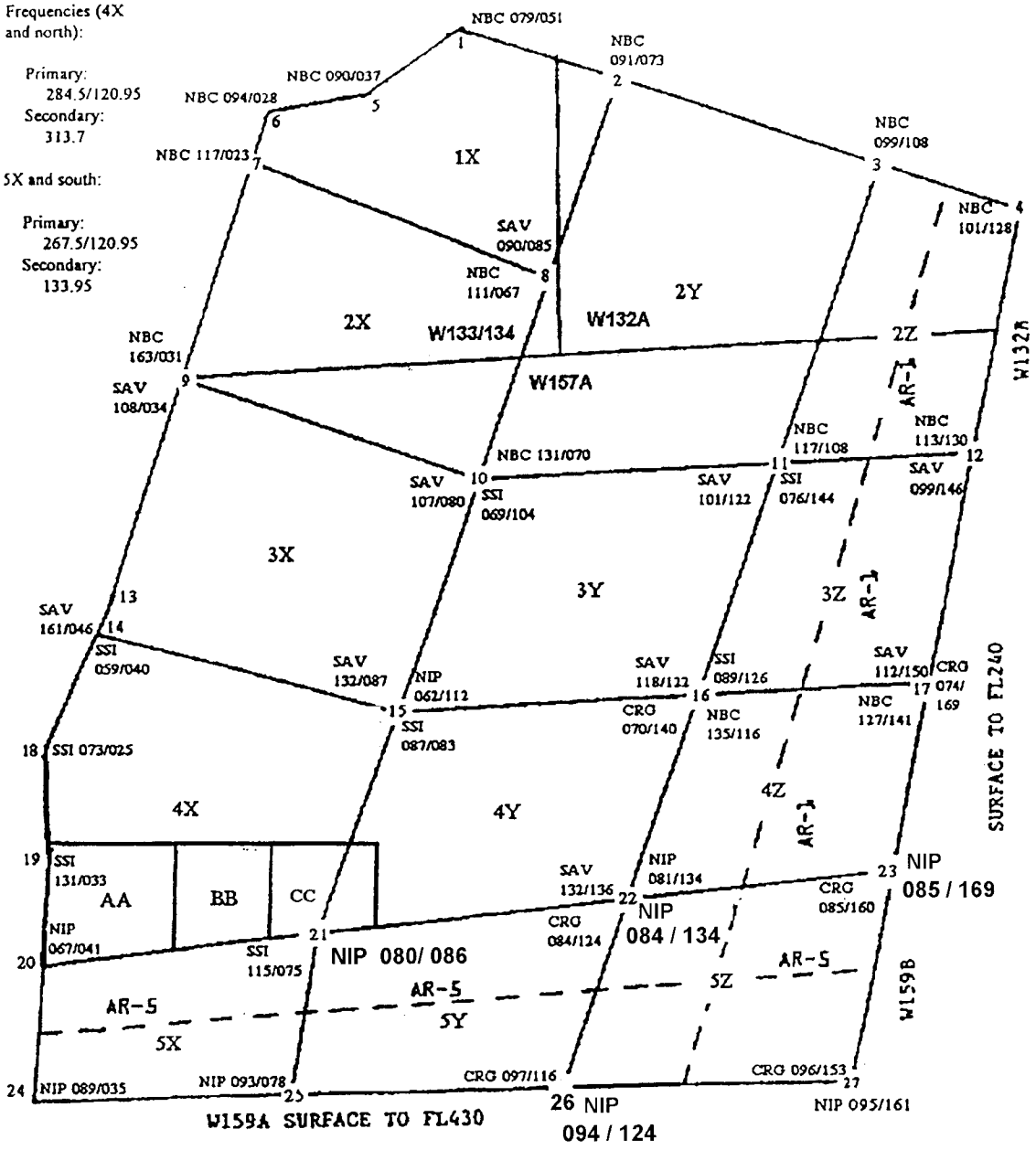
FACSFAC Jacksonville Northern Op Area

North Sector Frequencies (4X and north):

Primary: 284.5/120.95
Secondary: 313.7

5X and south:

Primary: 267.5/120.95
Secondary: 133.95



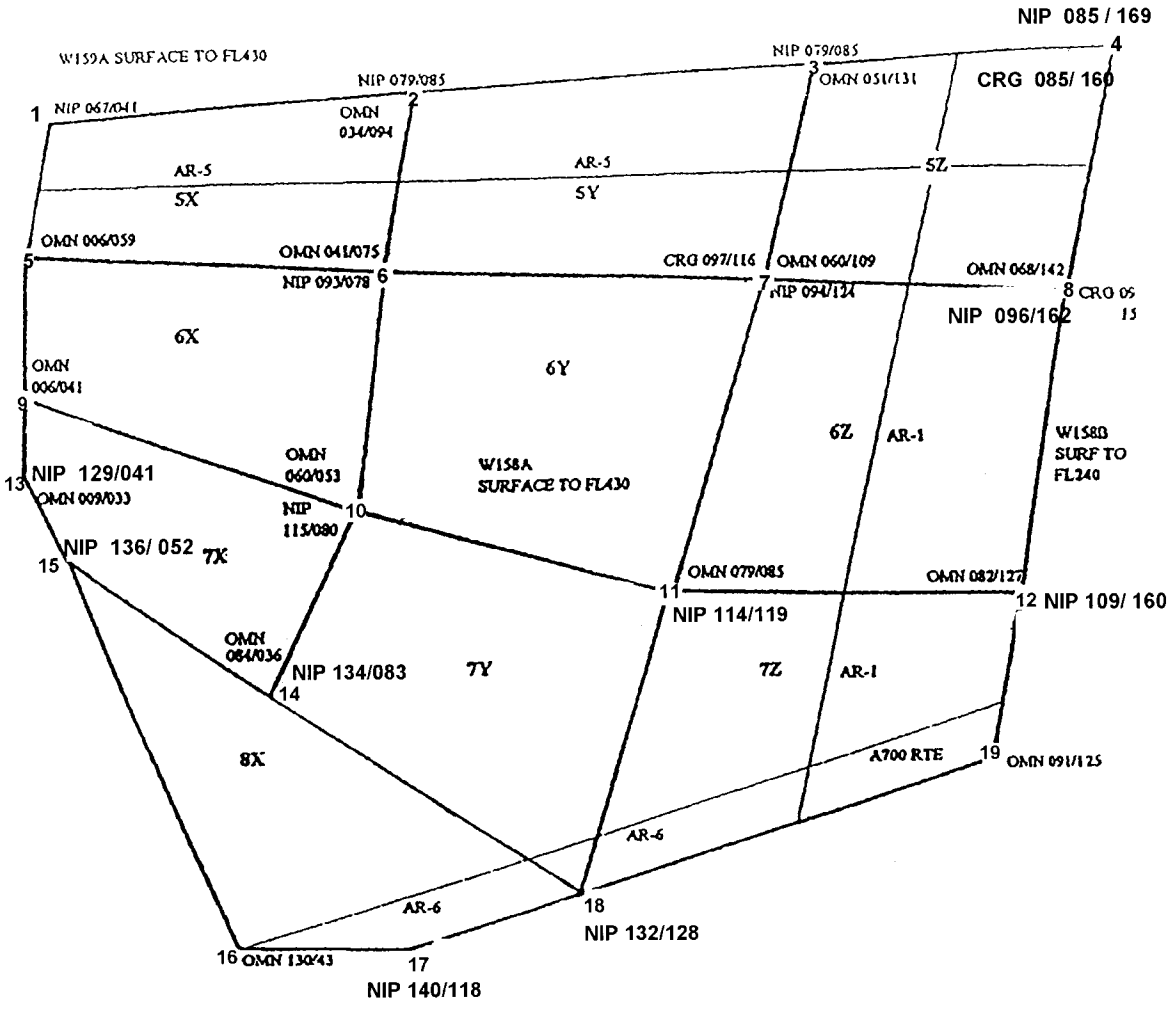
1.	32:42N 79:45W	7.	32:20N 80:18W	13.	31:37N 80:41W	19.	30:45N 80:54W	25.	30:15N 80:10W
2.	32:33N 79:17W	8.	32:10N 79:27W	14.	31:26N 80:48W	20.	30:33N 80:58W	26.	30:12N 79:17W
3.	32:20N 78:36W	9.	32:00N 80:29W	15.	31:13N 79:50W	21.	30:36N 80:05W	27.	30:10N 78:34W
4.	32:14N 78:13W	10.	31:47N 79:36W	16.	31:13N 79:00W	22.	30:39N 79:08W		
5.	32:32N 79:59W	11.	31:47N 78:46W	17.	31:13N 78:23W	23.	30:41N 78:28W		
6	32:29N 80:10W	12.	31:47N 78:17W	18.	31:12N 80:59W	24.	30:17N 81:00W		

Navy Jacksonville Tacan: NIP, CH 49, 30:14.1N, 81:40.5W, 4W variation

Brunswick VORTAC: SSI, CH 35, VOR 109.8, 31:03.0N, 81:26.8W, 4W variation
Savannah VORTAC: SAV, CH 74, VOR 112.7, 32:09.6N, 81:06.8W, 1W variation
Beaufort Tacan: NBC, CH 42, 32:28.7N, 80:43.0W, 5W variation

Hot areas AA, BB & CC are used for TacAir weapons training and may be in use while other aircraft are cleared "VFR mutual use" in 4X

FACSFAC JACKSONVILLE SOUTHERN OPAREA



SOUTHERN AREA (5X and south) frequencies:

Primary: 267.5 /120.95
Secondary: 133.95

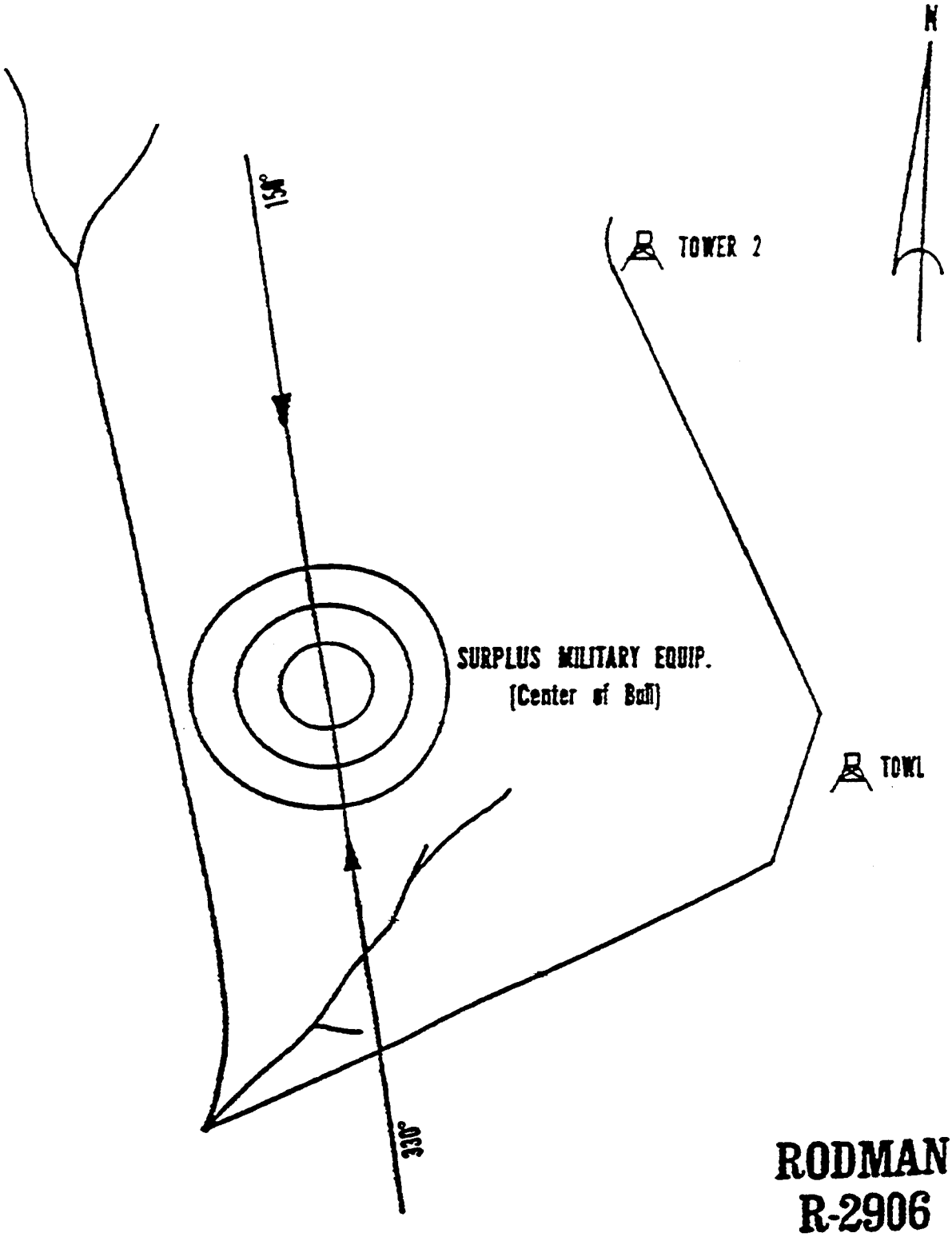
1. 30:33N 80:58W
2. 30:36N 80:05W
3. 30:39N 79:08W
4. 30:41N 78:28W
5. 30:17N 81:00W
6. 30:15N 80:10W
7. 30:12N 79:17W
8. 30:10N 78:34W
9. 29:59N 81:02W
10. 29:45N 80:14W
11. 29:34N 79:31W
12. 29:34N 78:42W
13. 29:51N 81:01W
14. 29:22N 80:26W
15. 29:40N 80:55W
16. 28:50N 80:29W
17. 28:50N 80:06W
18. 28:57N 79:43W
19. 29:14N 78:43W

NAVY JACKSONVILLE TACAN: NIP, CH49, 30:14.1N, 81:40.5 W, 4W variation

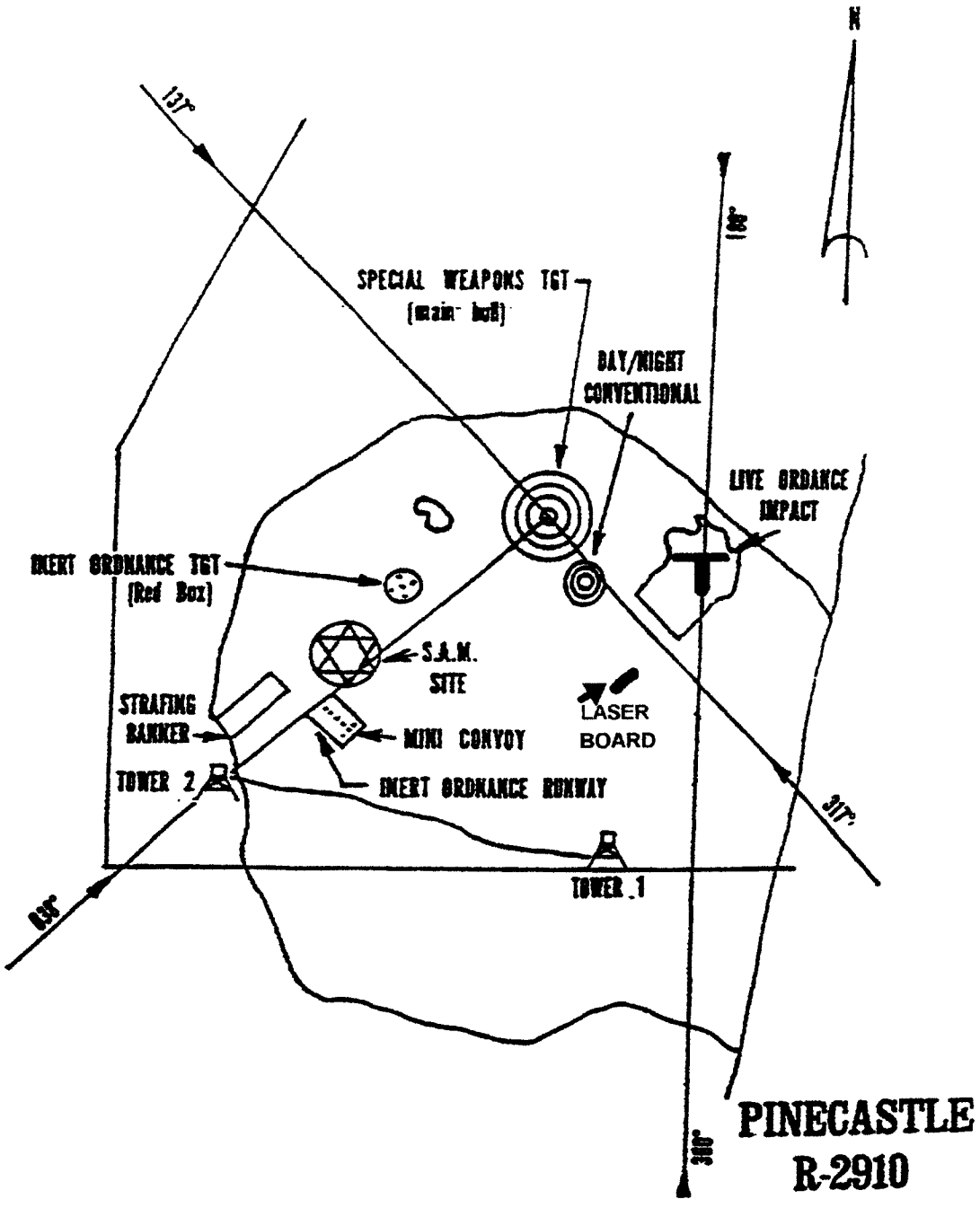
NAVY CECIL VOR: VQQ, 117.9, 30:12.8N 81:53.5W, 3W variation

ORMAND BEACH VORTAC: OMN, CH73, VOR 112.6, 29:18.2N 81:06.8W 0E VARIATION

TARGETS


N
TOWER 2
TOWL
SURPLUS MILITARY EQUIP.
(Center of Ball)
150°
330°
RODMAN
R-2906

TARGETS


N
137°
SPECIAL WEAPONS TGT
(main hull)
DAY/NIGHT
CONVENTIONAL
LIVE ORDNANCE
IMPACT
INERT ORDNANCE TGT
(Red Box)
S.A.M.
SITE
LASER
BOARD
STRAFING
BANNER
MINI CONVOY
TOWER 2
INERT ORDNANCE RUNWAY
317°
TOWER 1
038°
360°
PINECASTLE
R-2910